GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 16, 2003, 13:00:13 ; Search time 26 Seconds
(without alignments)
44.134 Million cell updates/sec

Title: US-09-757-788A-1
Perfect score: 73
Sequence: 1 HXXGXFTXDXXXXXXXXXXXXFIXXXXXXXXXXXXXXXX 39

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
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6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	33	45.2	31	4	US-09-209-799D-20	Sequence 20, Appl
2	32	43.8	27	4	US-08-472-349-7	Sequence 7, Appli
3	32	43.8	28	1	US-08-095-162-4	Sequence 4, Appli
4	32	43.8	28	1	US-08-470-220A-4	Sequence 4, Appli
5	32	43.8	28	3	US-08-967-374-4	Sequence 4, Appli
6	32	43.8	28	4	US-08-915-918A-3	Sequence 3, Appli
7	32	43.8	28	4	US-08-472-349-5	Sequence 5, Appli
8	32	43.8	28	4	US-09-209-799D-8	Sequence 8, Appli
9	32	43.8	28	4	US-09-505-991-4	Sequence 4, Appli
10	32	43.8	28	4	US-09-212-663-5	Sequence 5, Appli
11	32	43.8	28	5	PCT-US95-15800-21	Sequence 21, Appl
12	32	43.8	29	1	US-08-095-162-18	Sequence 18, Appl
13	32	43.8	29	1	US-08-470-220A-18	Sequence 18, Appl
14	32	43.8	29	3	US-08-967-374-18	Sequence 18, Appl
15	32	43.8	29	4	US-08-961-405A-3	Sequence 3, Appli
16	32	43.8	29	4	US-08-472-349-4	Sequence 4, Appli
17	32	43.8	29	4	US-09-209-799D-3	Sequence 3, Appli
18	32	43.8	29	4	US-09-209-799D-9	Sequence 9, Appli
19	32	43.8	29	4	US-09-505-991-18	Sequence 18, Appl
20	32	43.8	30	1	US-08-066-480-6	Sequence 6, Appli
21	32	43.8	30	1	US-08-095-162-1	Sequence 1, Appli
22	32	43.8	30	1	US-08-470-220A-1	Sequence 1, Appli
23	32	43.8	30	2	US-08-927-227-1	Sequence 1, Appli
24	32	43.8	30	3	US-08-967-374-1	Sequence 1, Appli
25	32	43.8	30	4	US-09-348-136-1	Sequence 1, Appli
26	32	43.8	30	4	US-08-961-405A-5	Sequence 5, Appli
27	32	43.8	30	4	US-08-961-405A-9	Sequence 9, Appli
28	32	43.8	30	4	US-08-915-918A-5	Sequence 5, Appli
29	32	43.8	30	4	US-09-302-596-4	Sequence 4, Appli
30	32	43.8	30	4	US-08-472-349-3	Sequence 3, Appli
31	32	43.8	30	4	US-09-333-415-4	Sequence 4, Appli
32	32	43.8	30	4	US-09-585-181A-4	Sequence 4, Appli
33	32	43.8	30	4	US-09-209-799D-10	Sequence 10, Appl
34	32	43.8	30	4	US-09-975-905-1	Sequence 1, Appli
35	32	43.8	30	4	US-09-505-991-1	Sequence 1, Appli
36	32	43.8	30	4	US-09-573-809-1	Sequence 1, Appli
37	32	43.8	30	4	US-09-303-016-4	Sequence 4, Appli
38	32	43.8	30	4	US-09-212-663-4	Sequence 4, Appli
39	32	43.8	30	5	PCT-US95-15800-27	Sequence 27, Appl
40	32	43.8	31	1	US-09-025-951-1	Sequence 1, Appli
41	32	43.8	31	1	US-08-095-162-2	Sequence 2, Appli
42	32	43.8	31	1	US-08-095-162-3	Sequence 3, Appli
43	32	43.8	31	1	US-08-295-913A-1	Sequence 1, Appli
44	32	43.8	31	1	US-08-470-220A-2	Sequence 2, Appli
45	32	43.8	31	1	US-08-470-220A-3	Sequence 3, Appli

ALIGNMENTS

RESULT 1
US-09-209-799D-20
; Sequence 20, Application US/09209799D
; Patent No. 6380357
; GENERAL INFORMATION:
; APPLICANT: Hermeling, Ronald
; APPLICANT: Hoffmann, James
; APPLICANT: Narasimhan, Chakravarthy
; TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS
; FILE REFERENCE: X-10242
; CURRENT APPLICATION NUMBER: US/09/209,799D
; CURRENT FILING DATE: 1998-12-11
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 20
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic construct
US-09-209-799D-20

Query Match 45.2%; Score 33; DB 4; Length 31;
Best Local Similarity 30.4%; Pred. No. 0.088;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

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Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
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Db          1 HATGTFTSDVSSYLEGQAAKEFI 23
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RESULT 2
US-08-472-349-7
; Sequence 7, Application US/08472349
; Patent No. 6284727
; GENERAL INFORMATION:
; APPLICANT: Kim, Yesook
; APPLICANT: Lambert, William J.
; APPLICANT: Qi, Hong
; APPLICANT: Gelfand, Robert A.
; APPLICANT: Geoghegan, Kieran F.
; APPLICANT: Danley, Dennis E.
; TITLE OF INVENTION: Prolonged Delivery of Peptides
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pfizer Inc
; STREET: 235 East 42nd Street, 20th Floor
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.

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;       ZIP:  10017-5755
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/472,349
;       FILING DATE:
;       CLASSIFICATION:  514
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/181,655
;       FILING DATE:
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Sheyka, Robert F.
;       REGISTRATION NUMBER:  31,304
;       REFERENCE/DOCKET NUMBER:  PC8391
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (212)573-1189
;       TELEFAX:  (212)573-1939
;       TELEX:  N/A
;   INFORMATION FOR SEQ ID NO:  7:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  27 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
;     HYPOTHETICAL:  NO
;     ANTI-SENSE:  NO
;     FRAGMENT TYPE:  N-terminal
;     ORIGINAL SOURCE:
;       ORGANISM:  N/A
;       STRAIN:  N/A
;       INDIVIDUAL ISOLATE:  N/A
;       HAPLOTYPE:  N/A
;       CELL LINE:  N/A
;     IMMEDIATE SOURCE:
;       LIBRARY:  N/A
;       CLONE:  N/A
;     POSITION IN GENOME:
;       CHROMOSOME/SEGMENT:  N/A
;       MAP POSITION:  N/A
US-08-472-349-7

  Query Match             43.8%;  Score 32;  DB 4;  Length 27;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 3
US-08-095-162-4
; Sequence 4, Application US/08095162
; Patent No. 5512459
;  GENERAL INFORMATION:
;    APPLICANT:  Wagner, Fred W.
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Manning, Shane
;    TITLE OF INVENTION:  Enzymatic Method for Modification of
;    TITLE OF INVENTION:  Recombinant Polypeptides
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 No. 5512459west Center
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  USA
;       ZIP:  55402
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/095,162
;       FILING DATE:  20-JUL-1993
;       CLASSIFICATION:  514
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Nelson, Albin J.
;       REGISTRATION NUMBER:  28,659
;       REFERENCE/DOCKET NUMBER:  8648.32-US01
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  612-332-5300
;       TELEFAX:  612-332-9081
;   INFORMATION FOR SEQ ID NO:  4:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  28 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
;     IMMEDIATE SOURCE:
;       CLONE:  GLP1 (7-34)
US-08-095-162-4

  Query Match             43.8%;  Score 32;  DB 1;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 4
US-08-470-220A-4
; Sequence 4, Application US/08470220A
; Patent No. 5707826
;  GENERAL INFORMATION:
;    APPLICANT:  Wagner, Fred W.
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Manning, Shane
;    TITLE OF INVENTION:  Enzymatic Method for Modification of
;    TITLE OF INVENTION:  Recombinant Polypeptides
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 No. 5707826west Center
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  USA
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/470,220A
;      FILING DATE:  06-JUN-1995
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/095,162
;      FILING DATE:  20-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Nelson, Albin J.
;      REGISTRATION NUMBER:  28,659
;      REFERENCE/DOCKET NUMBER:  8648.32-US01
;    TELECOMMUNICATION INFORMATION:
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;       TELEPHONE:  612-332-5300
;       TELEFAX:  612-332-9081
;  INFORMATION FOR SEQ ID NO:  4:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  28 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
;     IMMEDIATE SOURCE:
;       CLONE:  GLP1 (7-34)
US-08-470-220A-4

  Query Match             43.8%;  Score 32;  DB 1;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 5
US-08-967-374-4
; Sequence 4, Application US/08967374
; Patent No. 6037143
;  GENERAL INFORMATION:
;     APPLICANT:  Wagner, Fred W.
;     APPLICANT:  Stout, Jay
;     APPLICANT:  Henriksen, Dennis
;     APPLICANT:  Partridge, Bruce
;     APPLICANT:  Manning, Shane
;     TITLE OF INVENTION:  Enzymatic Method for Modification of
;     TITLE OF INVENTION:  Recombinant Polypeptides
;     NUMBER OF SEQUENCES:  26
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Merchant & Gould
;       STREET:  3100 No. 6037143west Center
;       CITY:  Minneapolis
;       STATE:  MN
;       COUNTRY:  USA
;       ZIP:  55402
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/967,374
;       FILING DATE:
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  08/520,485
;       FILING DATE:  29-AUG-1995
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Carter, Charles G.
;       REGISTRATION NUMBER:  35,093
;       REFERENCE/DOCKET NUMBER:  8648.32-USD1
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  612-332-5300
;       TELEFAX:  612-332-9081
;  INFORMATION FOR SEQ ID NO:  4:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  28 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
;     IMMEDIATE SOURCE:
;       CLONE:  GLP1 (7-34)
US-08-967-374-4

  Query Match             43.8%;  Score 32;  DB 3;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 6
US-08-915-918A-3
; Sequence 3, Application US/08915918A
; Patent No. 6277819
;  GENERAL INFORMATION:
;     APPLICANT:  Efendic, Suad
;     TITLE OF INVENTION:  USE OF GLP-1 OR ANALOGS IN TREATMENT OF
;     TITLE OF INVENTION:  MYOCARDIAL INFARCTION
;     NUMBER OF SEQUENCES:  6
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  BRINKS, HOFER, GILSON & LIONE
;       STREET:  NBC Tower - Suite 3600, 455 N. Cityfront
;       STREET:  Plaza Drive
;       CITY:  Chicago
;       STATE:  Illinois
;       COUNTRY:  USA
;       ZIP:  60611-5599
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/915,918A
;       FILING DATE:  21-AUG-1997
;       CLASSIFICATION:  514
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Martin, Alice O.
;       REGISTRATION NUMBER:  35,601
;       REFERENCE/DOCKET NUMBER:  8792/28
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  312-321-4200
;       TELEFAX:  312-321-4299
;  INFORMATION FOR SEQ ID NO:  3:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  28 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
US-08-915-918A-3

  Query Match             43.8%;  Score 32;  DB 4;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 7
US-08-472-349-5
; Sequence 5, Application US/08472349
; Patent No. 6284727
;  GENERAL INFORMATION:
;     APPLICANT:  Kim, Yesook
;     APPLICANT:  Lambert, William J.
;     APPLICANT:  Qi, Hong
;     APPLICANT:  Gelfand, Robert A.
;     APPLICANT:  Geoghegan, Kieran F.
;     APPLICANT:  Danley, Dennis E.
;     TITLE OF INVENTION:  Prolonged Delivery of Peptides
;     NUMBER OF SEQUENCES:  7
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Pfizer Inc
;       STREET:  235 East 42nd Street, 20th Floor
```

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;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10017-5755
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/472,349
;      FILING DATE:
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/181,655
;      FILING DATE:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Sheyka, Robert F.
;      REGISTRATION NUMBER:  31,304
;      REFERENCE/DOCKET NUMBER:  PC8391
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212)573-1189
;      TELEFAX:  (212)573-1939
;      TELEX:  N/A
;  INFORMATION FOR SEQ ID NO:  5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  28 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    FRAGMENT TYPE:  N-terminal
;    ORIGINAL SOURCE:
;      ORGANISM:  N/A
;      STRAIN:  N/A
;      INDIVIDUAL ISOLATE:  N/A
;      HAPLOTYPE:  N/A
;      CELL LINE:  N/A
;    IMMEDIATE SOURCE:
;      LIBRARY:  N/A
;      CLONE:  N/A
;    POSITION IN GENOME:
;      CHROMOSOME/SEGMENT:  N/A
;      MAP POSITION:  N/A
US-08-472-349-5

  Query Match             43.8%;  Score 32;  DB 4;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |           ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 8
US-09-209-799D-8
; Sequence 8, Application US/09209799D
; Patent No. 6380357
; GENERAL INFORMATION:
;  APPLICANT: Hermeling, Ronald
;  APPLICANT:  Hoffmann, James
;  APPLICANT:  Narasimhan, Chakravarthy
;  TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS
;  FILE REFERENCE: X-10242
;  CURRENT APPLICATION NUMBER: US/09/209,799D
;  CURRENT FILING DATE:  1998-12-11
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 8
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
US-09-209-799D-8

  Query Match             43.8%;  Score 32;  DB 4;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |           ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 9
US-09-505-991-4
; Sequence 4, Application US/09505991
; Patent No. 6403361
;  GENERAL INFORMATION:
;       APPLICANT: Wagner, Fred W.
;                  Stout, Jay
;                  Henriksen, Dennis
;                  Partridge, Bruce
;                  Manning, Shane
;       TITLE OF INVENTION: Enzymatic Method for Modification of
;                           Recombinant Polypeptides
;       NUMBER OF SEQUENCES: 26
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Merchant & Gould
;            STREET: 3100 No. 6403361west Center
;            CITY: Minneapolis
;            STATE: MN
;            COUNTRY: USA
;            ZIP: 55402
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/505,991
;            FILING DATE: 17-Feb-2000
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: 08/520,485
;            FILING DATE: <Unknown>
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Carter, Charles G.
;            REGISTRATION NUMBER: 35,093
;            REFERENCE/DOCKET NUMBER: 8648.32-USD1
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: 612-332-5300
;            TELEFAX: 612-332-9081
;   INFORMATION FOR SEQ ID NO: 4:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 28 amino acids
;            TYPE: amino acid
;            TOPOLOGY: linear
;       MOLECULE TYPE: peptide
;       IMMEDIATE SOURCE:
;            CLONE: GLP1 (7-34)
;       SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-505-991-4

  Query Match             43.8%;  Score 32;  DB 4;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |           ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23
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RESULT 10
US-09-212-663-5
; Sequence 5, Application US/09212663
; Patent No. 6461834
; GENERAL INFORMATION:
;  APPLICANT:  DORMADY, Dan
;  APPLICANT:  STOUT, Jay S.
;  APPLICANT:  STRYDOM, Daniel J.
;  APPLICANT:  HOLMQUIST, Barton
;  APPLICANT:  WAGNER, Fred W.
;  TITLE OF INVENTION:  ENZYMATIC AMIDATION OF PEPTIDES
;  FILE REFERENCE:  089187/0162
;  CURRENT APPLICATION NUMBER: US/09/212,663
;  CURRENT FILING DATE:  1998-12-16
;  PRIOR APPLICATION NUMBER:  US 60/107,311
;  PRIOR FILING DATE:  1998-11-06
;  NUMBER OF SEQ ID NOS:  25
;  SOFTWARE:  PatentIn Ver. 2.0
; SEQ ID NO 5
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Escherichia coli
US-09-212-663-5

  Query Match             43.8%;  Score 32;  DB 4;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 11
PCT-US95-15800-21
; Sequence 21, Application PC/TUS9515800
;  GENERAL INFORMATION:
;    APPLICANT:  BioNebraska, Inc.
;    TITLE OF INVENTION:  PRODUCTION OF PEPTIDES USING
;    TITLE OF INVENTION:  RECOMBINANT FUSION PROTEIN CONSTRICTS
;    NUMBER OF SEQUENCES:  33
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 Norwest Center, 90 S. 7th Street
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  U.S.A.
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  DOS
;      SOFTWARE:  FastSEQ Version 1.5
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US95/15800
;      FILING DATE:  07-DEC-1995
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/350,530
;      FILING DATE:  07-DEC-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Carter, Charles G
;      REGISTRATION NUMBER:  35,093
;      REFERENCE/DOCKET NUMBER:  8648.45USWO
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  612/332-5300
;      TELEFAX:  612/332-9081
;      TELEX:
;  INFORMATION FOR SEQ ID NO:  21:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  28 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    FRAGMENT TYPE:  internal
;    ORIGINAL SOURCE:
PCT-US95-15800-21

  Query Match             43.8%;  Score 32;  DB 5;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.14;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 12
US-08-095-162-18
; Sequence 18, Application US/08095162
; Patent No. 5512459
;  GENERAL INFORMATION:
;    APPLICANT:  Wagner, Fred W.
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Manning, Shane
;    TITLE OF INVENTION:  Enzymatic Method for Modification of
;    TITLE OF INVENTION:  Recombinant Polypeptides
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 No. 5512459west Center
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  USA
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/095,162
;      FILING DATE:  20-JUL-1993
;      CLASSIFICATION:  514
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Nelson, Albin J.
;      REGISTRATION NUMBER:  28,659
;      REFERENCE/DOCKET NUMBER:  8648.32-US01
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  612-332-5300
;      TELEFAX:  612-332-9081
;  INFORMATION FOR SEQ ID NO:  18:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  29 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-095-162-18

  Query Match             43.8%;  Score 32;  DB 1;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 0.15;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 13
US-08-470-220A-18
```

```
; Sequence 18, Application US/08470220A
; Patent No. 5707826
;  GENERAL INFORMATION:
;    APPLICANT:  Wagner, Fred W.
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Manning, Shane
;    TITLE OF INVENTION:  Enzymatic Method for Modification of
;    TITLE OF INVENTION:  Recombinant Polypeptides
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 No. 5707826west Center
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  USA
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/470,220A
;      FILING DATE:  06-JUN-1995
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/095,162
;      FILING DATE:  20-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Nelson, Albin J.
;      REGISTRATION NUMBER:  28,659
;      REFERENCE/DOCKET NUMBER:  8648.32-US01
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  612-332-5300
;      TELEFAX:  612-332-9081
;  INFORMATION FOR SEQ ID NO:  18:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  29 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-470-220A-18

  Query Match             43.8%;  Score 32;  DB 1;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 0.15;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 14
US-08-967-374-18
; Sequence 18, Application US/08967374
; Patent No. 6037143
;  GENERAL INFORMATION:
;    APPLICANT:  Wagner, Fred W.
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Manning, Shane
;    TITLE OF INVENTION:  Enzymatic Method for Modification of
;    TITLE OF INVENTION:  Recombinant Polypeptides
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 No. 6037143west Center
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  USA
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/967,374
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/520,485
;      FILING DATE:  29-AUG-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Carter, Charles G.
;      REGISTRATION NUMBER:  35,093
;      REFERENCE/DOCKET NUMBER:  8648.32-USD1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  612-332-5300
;      TELEFAX:  612-332-9081
;  INFORMATION FOR SEQ ID NO:  18:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  29 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-967-374-18

  Query Match             43.8%;  Score 32;  DB 3;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 0.15;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 15
US-08-961-405A-3
; Sequence 3, Application US/08961405A
; Patent No. 6191102
;  GENERAL INFORMATION:
;    APPLICANT:  DiMarchi, Richard D.
;    APPLICANT:  Efendic, Suad
;    TITLE OF INVENTION:  USE OF GLP-1 ANALOGS AND DERIVATIVES
;    TITLE OF INVENTION:  ADMINISTERED PERIPHERALLY IN REGULATION OF OBESITY
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  BARNES & THORNBURG
;      STREET:  200 W. Madison, Suite 2601
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  USA
;      ZIP:  60606
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/961,405A
;      FILING DATE:  30-OCT-1997
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 60/030,213
;      FILING DATE:  05-NOV-1996
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Martin, Alice O.
;      REGISTRATION NUMBER:  35,601
;      REFERENCE/DOCKET NUMBER:  3051/90264
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  312-357-1313
;      TELEFAX:  312-759-5646
;  INFORMATION FOR SEQ ID NO:  3:
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;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  29 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  28-29
;      OTHER INFORMATION:  /product= "in the peptide's largest
;      OTHER INFORMATION:  embodiment, positions 28-29 may be a Lys-Gly; the peptide may
;      OTHER INFORMATION:  encompass a molecule minus the Gly at position 29"
US-08-961-405A-3

  Query Match             43.8%;  Score 32;  DB 4;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 0.15;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


Search completed: July 16, 2003, 13:04:43
Job time : 27 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 16, 2003, 12:53:17 ; Search time 70 Seconds
(without alignments)
74.240 Million cell updates/sec

Title: US-09-757-788A-1
Perfect score: 73
Sequence: 1 HXXGXFTXDXXXXXXXXXXXXFIXXXXXXXXXXXXXXXXX 39

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_101002:*
1: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
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18: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1997.DAT:*
19: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1998.DAT:*
20: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1999.DAT:*
21: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000.DAT:*
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23: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	33	45.2	30	20	AAY80321	Glucagon peptide-1
2	33	45.2	31	17	AAW03901	Glucagon like pept
3	33	45.2	31	17	AAW03902	Glucagon like pept
4	33	45.2	31	17	AAW03894	Glucagon like pept
5	33	45.2	31	17	AAW03877	Glucagon like pept
6	33	45.2	31	22	AAE09270	Human glucagon-lik
7	33	45.2	31	22	AAG63295	An insoluble gluca
8	33	45.2	31	22	AAG63296	An insoluble gluca
9	32	43.8	24	21	AAY78956	Glucagon-like pept
10	32	43.8	25	21	AAY78955	Glucagon-like pept
11	32	43.8	26	21	AAY78954	Glucagon-like pept
12	32	43.8	27	16	AAR65215	Glucagon-like pept
13	32	43.8	27	21	AAY78953	Glucagon-like pept
14	32	43.8	28	15	AAR45437	Insulinotropin der
15	32	43.8	28	15	AAR63249	Insulinotropin (GL
16	32	43.8	28	17	AAW16669	Tetradecanoylated
17	32	43.8	28	17	AAW02644	Glucagon-like pept
18	32	43.8	28	17	AAR98950	Target peptide (GL
19	32	43.8	28	20	AAW93527	Peptide used in tr
20	32	43.8	28	21	AAB07295	Modified Glucagon
21	32	43.8	28	21	AAY83147	Glucagon-like pept
22	32	43.8	28	21	AAY88347	Glucagon-like pept
23	32	43.8	28	21	AAY78952	Glucagon-like pept
24	32	43.8	28	22	AAE09258	Human glucagon-lik
25	32	43.8	28	22	AAG63270	Amino acid sequenc
26	32	43.8	28	22	AAG63273	An insoluble gluca
27	32	43.8	28	23	ABB07145	Glucagon-like pept
28	32	43.8	28	23	AAM50395	Glucagon-like pept
29	32	43.8	28	23	AAM50397	Glucagon-like pept
30	32	43.8	29	13	AAR24524	GLP-1 derivative.
31	32	43.8	29	15	AAR45436	Insulinotropin der
32	32	43.8	29	15	AAR63248	Insulinotropin (GL
33	32	43.8	29	16	AAR69075	Glycogen Like Pept
34	32	43.8	29	17	AAR98964	GLP1(7-35). Not s
35	32	43.8	29	19	AAW63181	GLP-1(7-35). Homo
36	32	43.8	29	19	AAW50904	Glucagon-like pept
37	32	43.8	29	20	AAY39811	Glucagon-like pept
38	32	43.8	29	20	AAY34197	GLP-1 mutant pepti
39	32	43.8	29	20	AAY18038	GLP-1(7-37)OH deri
40	32	43.8	29	21	AAB11890	Shelf-stable gluca
41	32	43.8	29	21	AAY53279	Glucagon-like pept
42	32	43.8	29	21	AAY78951	Glucagon-like pept
43	32	43.8	29	22	AAE09253	Human glucagon-lik
44	32	43.8	29	22	AAE09259	Human glucagon-lik
45	32	43.8	29	22	AAG63274	An insoluble gluca

ALIGNMENTS

RESULT 1
AAY80321
ID AAY80321 standard; peptide; 30 AA.
XX
AC AAY80321;
XX
DT 24-MAY-2000 (first entry)
XX
DE Glucagon peptide-1 (7-37) analogue #16.
XX
KW Glucagon-Like Peptide-1 (7-37) analogue; GLP-1(7-37); anorectic;
KW antidiabetic; diabetes; obesity; metabolic stability.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Modified-site 30
FT /note= "C-terminal amide"
XX
PN FR2777283-A1.
XX
PD 15-OCT-1999.
XX
PF 10-APR-1998; 98FR-0004559.
XX
PR 10-APR-1998; 98FR-0004559.
XX
PA (ADIR) ADIR & CIE.
XX
PI Calas B, Grassy G, Chavanieu A, Sarrauste De Menthiere C, Renard P;
PI Pfeiffer B, Manechez D;
XX
DR WPI; 1999-608797/52.

```
XX
PT   New peptide for treating obesity and diabetes, and with improved
PT   metabolic stability  -
XX
PS   Example 13; Page 17; 36pp; French.
XX
CC   The invention relates to new Glucagon-Like Peptide-1 (7-37) (t(GLP-1))
CC   analogues of which this sequence represents a specific example of the
CC   peptide having the generic formula AAY80304 or AAY80305.  The peptides
CC   have anorectic and antidiabetic activity and are used for treating
CC   diseases associated to t(GLP-1), preferably type I or non-insulin
CC   dependent type II diabetes, obesity. The peptides have improved metabolic
CC   stability thus providing a longer lasting action compared to the natural
CC   peptides.
XX
SQ   Sequence   30 AA;

  Query Match             45.2%;  Score 33;  DB 20;  Length 30;
  Best Local Similarity   30.4%;  Pred. No. 0.43;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HASGTFTSDVSSYLEGQAAKEFI 23


RESULT 2
AAW03901
ID   AAW03901 standard; peptide; 31 AA.
XX
AC   AAW03901;
XX
DT   15-APR-1997  (first entry)
XX
DE   Glucagon like peptide 1 (7-37) analogue Ser26.
XX
KW   Human; glucagon like peptide; GLP-1; analogue; stimulation;
KW   pancreas; insulin; islet cell; treatment; type II diabetes.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 20
FT                   /note= "wild type Lys substituted with Ser"
FT   Misc-difference 29
FT                   /note= "optionally absent when Arg30 and Gly31 are
FT                    absent"
FT   Misc-difference 30
FT                   /note= "optionally absent when Gly31 is absent"
FT   Misc-difference 31
FT                   /note= "optionally absent"
XX
PN   US5545618-A.
XX
PD   13-AUG-1996.
XX
PF   24-JAN-1990;   90US-0468736.
XX
PR   20-SEP-1991;   91US-0762768.
PR   24-JAN-1990;   90US-0468736.
PR   10-DEC-1993;   93US-0165516.
XX
PA   (BUCK/) BUCKLEY D I.
PA   (HABE/) HABENER J F.
PA   (MALL/) MALLORY J B.
PA   (MOJS/) MOJSOV S.
XX
PI   Buckley DI,  Habener JF,  Mallory JB,  Mojsov S;
XX
DR   WPI; 1996-383697/38.
XX
PT   New modified glucagon-like peptide I fragments - have higher
PT   activity than glucagon or have improved plasma stability, useful for
PT   treating type II diabetes
XX
PS   Example 1; page -; 16pp; English.
XX
CC   The present peptide is a specific example of a claimed human
CC   glucagon like peptide 1 (GLP-1) analogue, which is useful for
CC   stimulating insulin release from pancreatic islet cells, especially
CC   in the treatment of type II diabetes at doses of 1 pg/kg to
CC   1 mg/kg.
XX
SQ   Sequence   31 AA;

  Query Match             45.2%;  Score 33;  DB 17;  Length 31;
  Best Local Similarity   30.4%;  Pred. No. 0.45;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAASEFI 23


RESULT 3
AAW03902
ID   AAW03902 standard; peptide; 31 AA.
XX
AC   AAW03902;
XX
DT   15-APR-1997  (first entry)
XX
DE   Glucagon like peptide 1 (7-37) analogue Ala26.
XX
KW   Human; glucagon like peptide; GLP-1; analogue; stimulation;
KW   pancreas; insulin; islet cell; treatment; type II diabetes.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 20
FT                   /note= "wild type Lys substituted with Ala"
FT   Misc-difference 29
FT                   /note= "optionally absent when Arg30 and Gly31 are
FT                    absent"
FT   Misc-difference 30
FT                   /note= "optionally absent when Gly31 is absent"
FT   Misc-difference 31
FT                   /note= "optionally absent"
XX
PN   US5545618-A.
XX
PD   13-AUG-1996.
XX
PF   24-JAN-1990;   90US-0468736.
XX
PR   20-SEP-1991;   91US-0762768.
PR   24-JAN-1990;   90US-0468736.
PR   10-DEC-1993;   93US-0165516.
XX
PA   (BUCK/) BUCKLEY D I.
PA   (HABE/) HABENER J F.
PA   (MALL/) MALLORY J B.
PA   (MOJS/) MOJSOV S.
XX
PI   Buckley DI,  Habener JF,  Mallory JB,  Mojsov S;
XX
DR   WPI; 1996-383697/38.
XX
PT   New modified glucagon-like peptide I fragments - have higher
PT   activity than glucagon or have improved plasma stability, useful for
PT   treating type II diabetes
XX
PS   Example 1; page -; 16pp; English.
XX
CC   The present peptide is a specific example of a claimed human
```

```
CC   glucagon like peptide 1 (GLP-1) analogue, which is useful for
CC   stimulating insulin release from pancreatic islet cells, especially
CC   in the treatment of type II diabetes at doses of 1 pg/kg to
CC   1 mg/kg.
XX
SQ   Sequence   31 AA;

  Query Match             45.2%;  Score 33;  DB 17;  Length 31;
  Best Local Similarity   30.4%;  Pred. No. 0.45;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAAEFI 23


RESULT 4
AAW03894
ID   AAW03894 standard; peptide; 31 AA.
XX
AC   AAW03894;
XX
DT   15-APR-1997  (first entry)
XX
DE   Glucagon like peptide 1 (7-37) analogue Ser22.
XX
KW   Human; glucagon like peptide; GLP-1; analogue; stimulation;
KW   pancreas; insulin; islet cell; treatment; type II diabetes.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 16
FT                   /note= "wild type Gly substituted with Ser"
FT   Misc-difference 29
FT                   /note= "optionally absent when Arg30 and Gly31 are
FT                    absent"
FT   Misc-difference 30
FT                   /note= "optionally absent when Gly31 is absent"
FT   Misc-difference 31
FT                   /note= "optionally absent"
XX
PN   US5545618-A.
XX
PD   13-AUG-1996.
XX
PF   24-JAN-1990;   90US-0468736.
XX
PR   20-SEP-1991;   91US-0762768.
PR   24-JAN-1990;   90US-0468736.
PR   10-DEC-1993;   93US-0165516.
XX
PA   (BUCK/) BUCKLEY D I.
PA   (HABE/) HABENER J F.
PA   (MALL/) MALLORY J B.
PA   (MOJS/) MOJSOV S.
XX
PI   Buckley DI,  Habener JF,  Mallory JB,  Mojsov S;
XX
DR   WPI; 1996-383697/38.
XX
PT   New modified glucagon-like peptide I fragments - have higher
PT   activity than glucagon or have improved plasma stability, useful for
PT   treating type II diabetes
XX
PS   Example 1; page -; 16pp; English.
XX
CC   The present peptide is a specific example of a claimed human
CC   glucagon like peptide 1 (GLP-1) analogue, which is useful for
CC   stimulating insulin release from pancreatic islet cells, especially
CC   in the treatment of type II diabetes at doses of 1 pg/kg to
CC   1 mg/kg.
XX
SQ   Sequence   31 AA;

  Query Match             45.2%;  Score 33;  DB 17;  Length 31;
  Best Local Similarity   30.4%;  Pred. No. 0.45;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLESQAAKEFI 23


RESULT 5
AAW03877
ID   AAW03877 standard; peptide; 31 AA.
XX
AC   AAW03877;
XX
DT   15-APR-1997  (first entry)
XX
DE   Glucagon like peptide 1 (7-37) analogue D-Thr/L-Thr9.
XX
KW   Human; glucagon like peptide; GLP-1; analogue; stimulation;
KW   pancreas; insulin; islet cell; treatment; type II diabetes.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 3
FT                   /note= "optionally D-form residue"
FT   Misc-difference 29
FT                   /note= "optionally absent when Arg30 and Gly31 are
FT                    absent"
FT   Misc-difference 30
FT                   /note= "optionally absent when Gly31 is absent"
FT   Misc-difference 31
FT                   /note= "optionally absent"
XX
PN   US5545618-A.
XX
PD   13-AUG-1996.
XX
PF   24-JAN-1990;   90US-0468736.
XX
PR   20-SEP-1991;   91US-0762768.
PR   24-JAN-1990;   90US-0468736.
PR   10-DEC-1993;   93US-0165516.
XX
PA   (BUCK/) BUCKLEY D I.
PA   (HABE/) HABENER J F.
PA   (MALL/) MALLORY J B.
PA   (MOJS/) MOJSOV S.
XX
PI   Buckley DI,  Habener JF,  Mallory JB,  Mojsov S;
XX
DR   WPI; 1996-383697/38.
XX
PT   New modified glucagon-like peptide I fragments - have higher
PT   activity than glucagon or have improved plasma stability, useful for
PT   treating type II diabetes
XX
PS   Example 1; page -; 16pp; English.
XX
CC   The present peptide is a specific example of a claimed human
CC   glucagon like peptide 1 (GLP-1) analogue, which is useful for
CC   stimulating insulin release from pancreatic islet cells, especially
CC   in the treatment of type II diabetes at doses of 1 pg/kg to
CC   1 mg/kg.
XX
SQ   Sequence   31 AA;

  Query Match             45.2%;  Score 33;  DB 17;  Length 31;
  Best Local Similarity   30.4%;  Pred. No. 0.45;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;
```

```
Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HATGTFTSDVSSYLEGQAAKEFI 23
```

RESULT 6
AAE09270
ID AAE09270 standard; peptide; 31 AA.
XX
AC AAE09270;
XX
DT 15-NOV-2001 (first entry)
XX
DE Human glucagon-like peptide-1 related molecule (GLP)-1 derivative #15.
XX
KW Human; glucagon-like peptide-1 related molecule; GLP; GLP crystal;
KW manufacturing process; pharmaceutical formulation; therapy; diabetes;
KW obesity.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN US2001014666-A1.
XX
PD 16-AUG-2001.
XX
PF 11-DEC-1998; 98US-0209799.
XX
PR 11-DEC-1998; 98US-0209799.
XX
PA (HERM/) HERMELING R N.
PA (HOFF/) HOFFMANN J A.
PA (NARA/) NARASIMHAN C.
XX
PI Hermeling RN, Hoffmann JA, Narasimhan C;
XX
DR WPI; 2001-529113/58.
XX
PT Glucagon-like peptide-1 crystals for treating diabetes are prepared
PT from mother liquor containing glucagon-like-peptide-1 related molecules
PT dissolved in buffered solution and alcohol -
XX
PS Disclosure; Page 13; 17pp; English.
XX
CC The present sequence is a human glucagon-like peptide-1 related molecule
CC (GLP)-1 derivative. The single tetragonal flat rod-shaped or plate-like
CC crystals of a GLP are prepared from a crystallisation solution containing
CC a GLP, a buffering agent, an alcohol or a mono or disaccharide and
CC optionally ammonium sulphate or zinc. The GLP crystals are used in
CC manufacturing process, in pharmaceutical formulations for treating
CC diabetes, obesity or related conditions in mammals.
XX
SQ Sequence 31 AA;

```
  Query Match             45.2%;  Score 33;  DB 22;  Length 31;
  Best Local Similarity   30.4%;  Pred. No. 0.45;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HATGTFTSDVSSYLEGQAAKEFI 23
```

RESULT 7
AAG63295
ID AAG63295 standard; protein; 31 AA.
XX
AC AAG63295;
XX
DT 01-OCT-2001 (first entry)
XX
DE An insoluble glucagon-like peptide 1 (GLP-1) compound.
XX
KW Glucagon-like peptide 1; GLP-1; soluble GLP-1.
XX
OS Synthetic.
XX
PN WO200155213-A2.
XX
PD 02-AUG-2001.
XX
PF 16-JAN-2001; 2001WO-US00010.
XX
PR 27-JAN-2000; 2000US-0178438.
PR 09-AUG-2000; 2000US-0224058.
XX
PA (ELIL) LILLY & CO ELI.
XX
PI Prouty WFJ, Rinella JVJ;
XX
DR WPI; 2001-476192/51.
XX
PT Preparing a Glucagon-like peptide 1 compound soluble in aqueous
PT solution at pH 7.4, comprises dissolving the insoluble form in aqueous
PT base or acid and neutralizing the solution -
XX
PS Claim 4; Page 46; 49pp; English.
XX
CC The present sequence represents an insoluble glucagon-like peptide 1
CC (GLP-1). The specification describes a method for preparing a GLP-1
CC compound that is soluble in aqueous form at pH 7.4 from a GLP-1
CC compound that is insoluble in aqueous form at pH 7.4. The method
CC comprises dissolving the insoluble compound in aqueous base or acid;
CC neutralizing the GLP-1 solution to a pH at which no amino acid
CC racemisation of the GLP-1 compound occurs; and isolating GLP-1 from
CC the neutralized solution. The method is used to prepare a soluble form
CC of a GLP-1 compound. The soluble form of GLP-1 is physiologically active.
XX
SQ Sequence 31 AA;

```
  Query Match             45.2%;  Score 33;  DB 22;  Length 31;
  Best Local Similarity   30.4%;  Pred. No. 0.45;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HATGTFTSDVSSYLEGQAAKEFI 23
```

RESULT 8
AAG63296
ID AAG63296 standard; protein; 31 AA.
XX
AC AAG63296;
XX
DT 01-OCT-2001 (first entry)
XX
DE An insoluble glucagon-like peptide 1 (GLP-1) compound.
XX
KW Glucagon-like peptide 1; GLP-1; soluble GLP-1.
XX
OS Synthetic.
XX
FH Key   Location/Qualifiers
FT Misc-difference 3
FT   /note= "D-form residue"
XX
PN WO200155213-A2.
XX
PD 02-AUG-2001.
XX
PF 16-JAN-2001; 2001WO-US00010.
XX
PR 27-JAN-2000; 2000US-0178438.
PR 09-AUG-2000; 2000US-0224058.

```
XX
PA   (ELIL ) LILLY & CO ELI.
XX
PI   Prouty WFJ,  Rinella JVJ;
XX
DR   WPI; 2001-476192/51.
XX
PT   Preparing a Glucagon-like peptide 1 compound soluble in aqueous
PT   solution at pH 7.4, comprises dissolving the insoluble form in aqueous
PT   base or acid and neutralizing the solution  -
XX
PS   Claim 4; Page 47; 49pp; English.
XX
CC   The present sequence represents an insoluble glucagon-like peptide 1
CC   (GLP-1). The specification describes a method for preparing a GLP-1
CC   compound that is soluble in aqueous form at pH 7.4 from a GLP-1
CC   compound that is insoluble in aqueous form at pH 7.4. The method
CC   comprises dissolving the insoluble compound in aqueous base or acid;
CC   neutralizing the GLP-1 solution to a pH at which no amino acid
CC   racemisation of the GLP-1 compound occurs; and isolating GLP-1 from
CC   the neutralized solution. The method is used to prepare a soluble form
CC   of a GLP-1 compound. The soluble form of GLP-1 is physiologically active.
XX
SQ   Sequence   31 AA;

  Query Match             45.2%;  Score 33;  DB 22;  Length 31;
  Best Local Similarity   30.4%;  Pred. No. 0.45;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HATGTFTSDVSSYLEGQAAKEFI 23


RESULT 9
AAY78956
ID   AAY78956 standard; peptide; 24 AA.
XX
AC   AAY78956;
XX
DT   05-JUN-2000  (first entry)
XX
DE   Glucagon-like peptide-1 fragment GLP-1 (7-30).
XX
KW   Glucagon-like peptide-1; GLP-1; insulin producing cell; insulin; amylase;
KW   diabetes mellitus type 1; human; livestock; pet.
XX
OS   Homo sapiens.
XX
PN   WO200009666-A2.
XX
PD   24-FEB-2000.
XX
PF   10-AUG-1999;   99WO-US18099.
XX
PR   10-AUG-1998;   98US-0095917.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Egan J,  Perfetti R,  Passaniti A,  Greig N,  Holloway H;
XX
DR   WPI; 2000-205999/18.
XX
PT   Differentiation of non-insulin producing cells into insulin-producing
PT   cells by glucagon-like peptide-1 or extendin-4, used to treat diabetes
PT   mellitus  -
XX
PS   Disclosure; Page 17; 119pp; English.
XX
CC   This sequence represents a glucagon-like peptide-1 (GLP-1) fragment.
CC   GLP-1 is a hormone normally secreted by neuroendocrine cells of the gut,
CC   in response to food. GLP-1 fragments or Extendin-4 growth factor
CC   fragments can be used in the production of a population of
CC   insulin-producing cells from a population of non-insulin producing cells.
CC   The methods may also be used to promote pancreatic amylase producing
CC   cells to produce both insulin and amylase. The methods are used to treat
CC   diabetes mellitus (type 1) in humans, domesticated animals, livestock and
CC   pets.
XX
SQ   Sequence   24 AA;

  Query Match             43.8%;  Score 32;  DB 21;  Length 24;
  Best Local Similarity   30.4%;  Pred. No. 0.61;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 10
AAY78955
ID   AAY78955 standard; peptide; 25 AA.
XX
AC   AAY78955;
XX
DT   05-JUN-2000  (first entry)
XX
DE   Glucagon-like peptide-1 fragment GLP-1 (7-31).
XX
KW   Glucagon-like peptide-1; GLP-1; insulin producing cell; insulin; amylase;
KW   diabetes mellitus type 1; human; livestock; pet.
XX
OS   Homo sapiens.
XX
PN   WO200009666-A2.
XX
PD   24-FEB-2000.
XX
PF   10-AUG-1999;   99WO-US18099.
XX
PR   10-AUG-1998;   98US-0095917.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Egan J,  Perfetti R,  Passaniti A,  Greig N,  Holloway H;
XX
DR   WPI; 2000-205999/18.
XX
PT   Differentiation of non-insulin producing cells into insulin-producing
PT   cells by glucagon-like peptide-1 or extendin-4, used to treat diabetes
PT   mellitus  -
XX
PS   Disclosure; Page 17; 119pp; English.
XX
CC   This sequence represents a glucagon-like peptide-1 (GLP-1) fragment.
CC   GLP-1 is a hormone normally secreted by neuroendocrine cells of the gut,
CC   in response to food. GLP-1 fragments or Extendin-4 growth factor
CC   fragments can be used in the production of a population of
CC   insulin-producing cells from a population of non-insulin producing cells.
CC   The methods may also be used to promote pancreatic amylase producing
CC   cells to produce both insulin and amylase. The methods are used to treat
CC   diabetes mellitus (type 1) in humans, domesticated animals, livestock and
CC   pets.
XX
SQ   Sequence   25 AA;

  Query Match             43.8%;  Score 32;  DB 21;  Length 25;
  Best Local Similarity   30.4%;  Pred. No. 0.64;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23
```

```
RESULT 11
AAY78954
ID   AAY78954 standard; peptide; 26 AA.
XX
AC   AAY78954;
XX
DT   05-JUN-2000  (first entry)
XX
DE   Glucagon-like peptide-1 fragment GLP-1 (7-32).
XX
KW   Glucagon-like peptide-1; GLP-1; insulin producing cell; insulin; amylase;
KW   diabetes mellitus type 1; human; livestock; pet.
XX
OS   Homo sapiens.
XX
PN   WO200009666-A2.
XX
PD   24-FEB-2000.
XX
PF   10-AUG-1999;   99WO-US18099.
XX
PR   10-AUG-1998;   98US-0095917.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Egan J,  Perfetti R,  Passaniti A,  Greig N,  Holloway H;
XX
DR   WPI; 2000-205999/18.
XX
PT   Differentiation of non-insulin producing cells into insulin-producing
PT   cells by glucagon-like peptide-1 or extendin-4, used to treat diabetes
PT   mellitus  -
XX
PS   Disclosure; Page 16; 119pp; English.
XX
CC   This sequence represents a glucagon-like peptide-1 (GLP-1) fragment.
CC   GLP-1 is a hormone normally secreted by neuroendocrine cells of the gut,
CC   in response to food. GLP-1 fragments or Extendin-4 growth factor
CC   fragments can be used in the production of a population of
CC   insulin-producing cells from a population of non-insulin producing cells.
CC   The methods may also be used to promote pancreatic amylase producing
CC   cells to produce both insulin and amylase. The methods are used to treat
CC   diabetes mellitus (type 1) in humans, domesticated animals, livestock and
CC   pets.
XX
SQ   Sequence   26 AA;

  Query Match            43.8%;  Score 32;  DB 21;  Length 26;
  Best Local Similarity   30.4%;  Pred. No. 0.66;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 12
AAR65215
ID   AAR65215 standard; peptide; 27 AA.
XX
AC   AAR65215;
XX
DT   18-OCT-1995  (first entry)
XX
DE   Glucagon-like peptide-1 (amino acids 7-37).
XX
KW   glucagon-like peptide-1; GLP-1; GLP-1(7-37); diabetes; stimulate;
KW   insulin production; composition; protamine; metal salt; cobalt; zinc.
XX
OS   Synthetic.
XX
PN   WO9505848-A.
XX
PD   02-MAR-1995.
XX
PF   23-AUG-1994;   94WO-DK00317.
XX
PR   24-AUG-1993;   93DK-0000955.
PR   15-SEP-1993;   93US-0122077.
XX
PA   (NOVO ) NOVO-NORDISK AS.
XX
PI   Agerbk H,  Balschmidt P,  Jorgensen KH,  Agerbaek H;
XX
DR   WPI; 1995-106680/14.
XX
PT   Compsns contg glucagon-like peptide-1 and protamine and/or metal
PT   ions  - have protracted action and are used to treat diabetes
XX
PS   Claim 1; Page 3; 9pp; English.
XX
CC   This glucagon-like peptide-1 (GLP-1) cpd. comprises amino acids 7-37 and
CC   is designated GLP-1(7-37). GLP-1 compsns. are claimed that contain in
CC   addition to a GLP-1 peptide, a protamine and/or a metal salt. When
CC   GLP-1(7-37) is used, the compsn. contains a metal salt selected from the
CC   gp. consisting of cobalto and zinc salts. The compsns. are used to treat
CC   diabetes. They release the same or almost the same amt. of the active
CC   cpd. per time unit during a very long period of time.
XX
SQ   Sequence   27 AA;

  Query Match            43.8%;  Score 32;  DB 16;  Length 27;
  Best Local Similarity   30.4%;  Pred. No. 0.69;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 13
AAY78953
ID   AAY78953 standard; peptide; 27 AA.
XX
AC   AAY78953;
XX
DT   05-JUN-2000  (first entry)
XX
DE   Glucagon-like peptide-1 fragment GLP-1 (7-33).
XX
KW   Glucagon-like peptide-1; GLP-1; insulin producing cell; insulin; amylase;
KW   diabetes mellitus type 1; human; livestock; pet.
XX
OS   Homo sapiens.
XX
PN   WO200009666-A2.
XX
PD   24-FEB-2000.
XX
PF   10-AUG-1999;   99WO-US18099.
XX
PR   10-AUG-1998;   98US-0095917.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Egan J,  Perfetti R,  Passaniti A,  Greig N,  Holloway H;
XX
DR   WPI; 2000-205999/18.
XX
PT   Differentiation of non-insulin producing cells into insulin-producing
PT   cells by glucagon-like peptide-1 or extendin-4, used to treat diabetes
PT   mellitus  -
XX
PS   Disclosure; Page 16; 119pp; English.
XX
CC   This sequence represents a glucagon-like peptide-1 (GLP-1) fragment.
```

CC GLP-1 is a hormone normally secreted by neuroendocrine cells of the gut,
CC in response to food. GLP-1 fragments or Extendin-4 growth factor
CC fragments can be used in the production of a population of
CC insulin-producing cells from a population of non-insulin producing cells.
CC The methods may also be used to promote pancreatic amylase producing
CC cells to produce both insulin and amylase. The methods are used to treat
CC diabetes mellitus (type 1) in humans, domesticated animals, livestock and
CC pets.
XX
SQ Sequence 27 AA;

Query Match 43.8%; Score 32; DB 21; Length 27;
Best Local Similarity 30.4%; Pred. No. 0.69;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

Qy 1 HXXGXFTXDXXXXXXXXXXXXFI 23
| | || | ||
Db 1 HAEGTFTSDVSSYLEGQAAKEFI 23

RESULT 14
AAR45437
ID AAR45437 standard; protein; 28 AA.
XX
AC AAR45437;
XX
DT 27-JUN-1994 (first entry)
XX
DE Insulinotropin derivative.
XX
KW Insulinotropic; activity; enhancing insulin activity; treatment;
KW Type II diabetes.
XX
OS Synthetic.
XX
PN WO9325579-A.
XX
PD 23-DEC-1993.
XX
PF 14-APR-1993; 93WO-US03388.
XX
PR 15-JUN-1992; 92US-0899073.
XX
PA (PFIZ) PFIZER INC.
XX
PI Andrews GC, Daumy GO, Francoeur ML, Larson ER;
XX
DR WPI; 1994-007457/01.
XX
PT New derivs. of glucagon-like peptide 1 and insulinotropin - used for
PT enhancing insulin action in a mammal, partic. by iontophoretic admin.
XX
PS Claim 3; Page 20; 32pp; English.
XX
CC The sequence is that of a derivative of insulinotropin which
CC has insulinotropic activity and is useful for enhancing insulin
CC action in a mammal, partic. for treating Type II diabetes
CC (claimed). It is partic. suited for delivery to a mammal by
CC ionophoresis.
XX
SQ Sequence 28 AA;

Query Match 43.8%; Score 32; DB 15; Length 28;
Best Local Similarity 30.4%; Pred. No. 0.71;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

Qy 1 HXXGXFTXDXXXXXXXXXXXXFI 23
| | || | ||
Db 1 HAEGTFTSDVSSYLEGQAAKEFI 23

RESULT 15
AAR63249
ID AAR63249 standard; peptide; 28 AA.
XX
AC AAR63249;
XX
DT 02-MAY-1995 (first entry)
XX
DE Insulinotropin (GLP-1(7-34)) for use in treating NIDDM.
XX
KW insulinotropic activity; GLP-1; glucagon-like protein 1; NIDDM;
KW non-insulin dependent diabetes mellitus; insulintropin; truncated.
XX
OS Synthetic.
XX
PN EP619322-A.
XX
PD 12-OCT-1994.
XX
PF 10-FEB-1994; 94EP-0300981.
XX
PR 07-APR-1993; 93US-0044133.
XX
PA (PFIZ) PFIZER INC.
PA (PFIZ) PFIZER CORP.
XX
PI Danley DE, Gelfand RA, Geoghegan KF, Kim Y, Lambert WJ;
PI Qi H, Oih, Hong Q, Yesook K;
XX
DR WPI; 1994-311774/39.
XX
PT Treatment of non-insulin dependent diabetes mellitus - using a
PT glucagon-like peptide 1 or deriv. with prolonged action for
PT sustained glycaemic control
XX
PS Claim 2; Page 46; 70pp; English.
XX
CC This peptide is GLP-1(7-34) [GLP = glucagon-like peptide], a truncated
CC deriv. of GLP-1. GLP-1 and its deriv.s are useful in the treatment of
CC Non-Insulin Dependent Diabetes Mellitus (NIDDM). During processing in
CC the pancreas and intestine, GLP-1 (AAR63245) is converted to a 31 amino
CC acid peptide having amino acids 7-37 of GLP-1, alternatively referred
CC to as insulinotropin. GLP-1(7-37) has insulinotropic activity, ie. it
CC is able to stimulate, or cause to be stimulated, the synthesis of the
CC hormone insulin. Other derivs. of GLP-1 are shown in AAR63246-51. It
CC has been discovered that prolonged plasma elevations of GLP-1, and
CC related polypeptides, are necessary during the meal and beyond to
CC achieve sustained glycemic control in patients with NIDDM. The invention
CC provides a compsn. that has prolonged action after each administration.
XX
SQ Sequence 28 AA;

Query Match 43.8%; Score 32; DB 15; Length 28;
Best Local Similarity 30.4%; Pred. No. 0.71;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

Qy 1 HXXGXFTXDXXXXXXXXXXXXFI 23
| | || | ||
Db 1 HAEGTFTSDVSSYLEGQAAKEFI 23

Search completed: July 16, 2003, 13:01:26
Job time : 72 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 16, 2003, 13:03:28 ; Search time 51 Seconds
(without alignments)
90.816 Million cell updates/sec

Title: US-09-757-788A-1
Perfect score: 73
Sequence: 1 HXXGXFTXDXXXXXXXXXXXFIXXXXXXXXXXXXXXXX 39

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 451899 seqs, 118759770 residues

Total number of hits satisfying chosen parameters: 451899

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published_Applications_AA:*
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14: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	33	45.2	31	9	US-09-997-792-20	Sequence 20, Appl
2	32	43.8	27	9	US-09-943-084-7	Sequence 7, Appli
3	32	43.8	28	9	US-09-997-792-8	Sequence 8, Appli
4	32	43.8	28	9	US-10-169-657-3	Sequence 3, Appli
5	32	43.8	28	9	US-10-169-657-6	Sequence 6, Appli
6	32	43.8	28	9	US-10-170-301-2	Sequence 2, Appli
7	32	43.8	29	9	US-09-834-229A-3	Sequence 3, Appli
8	32	43.8	29	9	US-09-997-792-3	Sequence 3, Appli
9	32	43.8	29	9	US-09-997-792-9	Sequence 9, Appli
10	32	43.8	29	9	US-10-169-657-7	Sequence 7, Appli
11	32	43.8	30	9	US-10-125-255-1	Sequence 1, Appli
12	32	43.8	30	9	US-09-834-229A-5	Sequence 5, Appli
13	32	43.8	30	9	US-09-997-792-10	Sequence 10, Appl
14	32	43.8	30	9	US-10-091-258-4	Sequence 4, Appli
15	32	43.8	30	9	US-10-055-259-4	Sequence 4, Appli
16	32	43.8	30	9	US-10-265-345A-2	Sequence 2, Appli
17	32	43.8	30	9	US-10-265-345A-9	Sequence 9, Appli
18	32	43.8	30	9	US-10-265-345A-10	Sequence 10, Appl
19	32	43.8	30	10	US-09-851-738-4	Sequence 4, Appli
20	32	43.8	30	10	US-09-805-507-4	Sequence 4, Appli
21	32	43.8	30	10	US-09-859-804-4	Sequence 4, Appli
22	32	43.8	30	10	US-09-982-978-4	Sequence 4, Appli
23	32	43.8	30	10	US-09-953-021B-4	Sequence 4, Appli
24	32	43.8	30	12	US-10-072-540A-4	Sequence 4, Appli
25	32	43.8	31	9	US-09-834-229A-1	Sequence 1, Appli
26	32	43.8	31	9	US-09-997-792-1	Sequence 1, Appli
27	32	43.8	31	9	US-09-997-792-11	Sequence 11, Appl
28	32	43.8	31	9	US-09-997-792-12	Sequence 12, Appl
29	32	43.8	31	9	US-09-997-792-13	Sequence 13, Appl
30	32	43.8	31	9	US-09-997-792-19	Sequence 19, Appl
31	32	43.8	31	9	US-09-997-792-21	Sequence 21, Appl
32	32	43.8	31	9	US-09-997-792-22	Sequence 22, Appl
33	32	43.8	31	9	US-09-997-792-23	Sequence 23, Appl
34	32	43.8	31	9	US-09-997-792-24	Sequence 24, Appl
35	32	43.8	31	9	US-09-997-792-25	Sequence 25, Appl
36	32	43.8	31	9	US-09-997-792-29	Sequence 29, Appl
37	32	43.8	31	9	US-10-093-958-19	Sequence 19, Appl
38	32	43.8	31	9	US-10-169-657-1	Sequence 1, Appli
39	32	43.8	31	9	US-10-169-657-8	Sequence 8, Appli
40	32	43.8	31	9	US-10-169-657-9	Sequence 9, Appli
41	32	43.8	31	9	US-10-169-657-28	Sequence 28, Appl
42	32	43.8	31	9	US-10-169-657-29	Sequence 29, Appl
43	32	43.8	31	9	US-10-169-657-30	Sequence 30, Appl
44	32	43.8	31	9	US-10-169-657-31	Sequence 31, Appl
45	32	43.8	31	9	US-10-169-657-33	Sequence 33, Appl

ALIGNMENTS

RESULT 1
US-09-997-792-20
; Sequence 20, Application US/09997792
; Publication No. US20030045464A1
; GENERAL INFORMATION:
; APPLICANT: Hermeling, Ronald
; APPLICANT: Hoffmann, James
; APPLICANT: Narasimhan, Chakravarthy
; TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS
; FILE REFERENCE: X-10242
; CURRENT APPLICATION NUMBER: US/09/997,792
; CURRENT FILING DATE: 2001-11-30
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 20
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: synthetic construct
US-09-997-792-20

Query Match 45.2%; Score 33; DB 9; Length 31;
Best Local Similarity 30.4%; Pred. No. 0.13;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

Qy 1 HXXGXFTXDXXXXXXXXXXXXFI 23
| | | || | || |
Db 1 HATGTFTSDVSSYLEGQAAKEFI 23

RESULT 2
US-09-943-084-7
; Sequence 7, Application US/09943084
; Publication No. US20030050237A1
; GENERAL INFORMATION:
; APPLICANT: Kim, Yesook
; Lambert, William J.
; Qi, Hong
; Gelfand, Robert A.
; Geoghegan, Kieran F.
; Danley, Dennis E.

```
;       TITLE OF INVENTION: Prolonged Delivery of Peptides
;       NUMBER OF SEQUENCES: 7
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Pfizer Inc
;            STREET: 235 East 42nd Street, 20th Floor
;            CITY: New York
;            STATE: New York
;            COUNTRY: U.S.A.
;            ZIP: 10017-5755
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.25
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/943,084
;            FILING DATE: 31-Aug-2001
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: US/08/181,655
;            FILING DATE: <Unknown>
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Sheyka, Robert F.
;            REGISTRATION NUMBER: 31,304
;            REFERENCE/DOCKET NUMBER: PC8391
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: (212)573-1189
;            TELEFAX: (212)573-1939
;            TELEX: N/A
;   INFORMATION FOR SEQ ID NO: 7:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 27 amino acids
;            TYPE: amino acid
;            STRANDEDNESS: single
;            TOPOLOGY: linear
;       MOLECULE TYPE: peptide
;       HYPOTHETICAL: NO
;       ANTI-SENSE: NO
;       FRAGMENT TYPE: N-terminal
;       ORIGINAL SOURCE:
;            ORGANISM: N/A
;            STRAIN: N/A
;            INDIVIDUAL ISOLATE: N/A
;            HAPLOTYPE: N/A
;            CELL LINE: N/A
;       IMMEDIATE SOURCE:
;            LIBRARY: N/A
;            CLONE: N/A
;       POSITION IN GENOME:
;            CHROMOSOME/SEGMENT: N/A
;            MAP POSITION: N/A
;       SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-09-943-084-7

  Query Match             43.8%;  Score 32;  DB 9;  Length 27;
  Best Local Similarity   30.4%;  Pred. No. 0.2;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 3
US-09-997-792-8
; Sequence 8, Application US/09997792
; Publication No. US20030045464A1
; GENERAL INFORMATION:
;  APPLICANT: Hermeling, Ronald
;  APPLICANT:  Hoffmann, James
;  APPLICANT:  Narasimhan, Chakravarthy
;  TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS
;  FILE REFERENCE: X-10242
;  CURRENT APPLICATION NUMBER: US/09/997,792
;  CURRENT FILING DATE:  2001-11-30
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 8
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
US-09-997-792-8

  Query Match             43.8%;  Score 32;  DB 9;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.21;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 4
US-10-169-657-3
; Sequence 3, Application US/10169657
; Publication No. US20030060412A1
; GENERAL INFORMATION:
;  APPLICANT: Eli Lilly and Company
;  TITLE OF INVENTION: Process for Solubilizing Glucagon-Like Peptide 1 Compounds
;  FILE REFERENCE: X-11708
;  CURRENT APPLICATION NUMBER: US/10/169,657
;  CURRENT FILING DATE:  2002-06-28
;  PRIOR APPLICATION NUMBER: US 60/178,438
;  PRIOR FILING DATE: 2000-01-27
;  PRIOR APPLICATION NUMBER: US 60/224,058
;  PRIOR FILING DATE: 2000-08-09
;  NUMBER OF SEQ ID NOS: 36
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 3
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
;   FEATURE:
;   NAME/KEY: VARIANT
;   LOCATION: (28)..(28)
;   OTHER INFORMATION: X at position 28 is Lys-COOH and Lys-Gly-COOH
US-10-169-657-3

  Query Match             43.8%;  Score 32;  DB 9;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.21;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 5
US-10-169-657-6
; Sequence 6, Application US/10169657
; Publication No. US20030060412A1
; GENERAL INFORMATION:
;  APPLICANT: Eli Lilly and Company
;  TITLE OF INVENTION: Process for Solubilizing Glucagon-Like Peptide 1 Compounds
;  FILE REFERENCE: X-11708
;  CURRENT APPLICATION NUMBER: US/10/169,657
;  CURRENT FILING DATE:  2002-06-28
;  PRIOR APPLICATION NUMBER: US 60/178,438
;  PRIOR FILING DATE: 2000-01-27
;  PRIOR APPLICATION NUMBER: US 60/224,058
;  PRIOR FILING DATE: 2000-08-09
;  NUMBER OF SEQ ID NOS: 36
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;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 6
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
;   FEATURE:
;   NAME/KEY: VARIANT
;   LOCATION: (1)..(28)
;   OTHER INFORMATION: The last 3 amino acids of GLP-1 (7-37) are deleted
US-10-169-657-6

  Query Match             43.8%;  Score 32;  DB 9;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.21;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 6
US-10-170-301-2
; Sequence 2, Application US/10170301
; Publication No. US20030069182A1
; GENERAL INFORMATION:
;  APPLICANT: Rinella, Joseph
;  TITLE OF INVENTION: Protein Formulations
;  FILE REFERENCE: X12473A
;  CURRENT APPLICATION NUMBER: US/10/170,301
;  CURRENT FILING DATE:  2002-06-12
;  NUMBER OF SEQ ID NOS: 3
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 2
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: MISC_FEATURE
;   LOCATION: (28)..(28)
;   OTHER INFORMATION: Xaa = Lys or Lys-Gly
US-10-170-301-2

  Query Match             43.8%;  Score 32;  DB 9;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 0.21;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 7
US-09-834-229A-3
; Sequence 3, Application US/09834229A
; Publication No. US20030022823A1
; GENERAL INFORMATION:
;  APPLICANT: Efendic, Suad
;  TITLE OF INVENTION: USE OF GLP-1 OR ANALOGS IN TREATMENT OF MYOCARDIAL INFARCTION
;  FILE REFERENCE: X-10822A
;  CURRENT APPLICATION NUMBER: US/09/834,229A
;  CURRENT FILING DATE:  2001-04-12
;  PRIOR APPLICATION NUMBER: US 08/915,918
;  PRIOR FILING DATE: 1997-08-21
;  PRIOR APPLICATION NUMBER: US 06/024,980
;  PRIOR FILING DATE: 1996-08-30
;  NUMBER OF SEQ ID NOS: 6
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
;   NAME/KEY: MISC_FEATURE
;   LOCATION: (29)..(29)
;   OTHER INFORMATION: Xaa at position 29 is absent or Gly.
US-09-834-229A-3

  Query Match             43.8%;  Score 32;  DB 9;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 0.22;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 8
US-09-997-792-3
; Sequence 3, Application US/09997792
; Publication No. US20030045464A1
; GENERAL INFORMATION:
;  APPLICANT: Hermeling, Ronald
;  APPLICANT:  Hoffmann, James
;  APPLICANT:  Narasimhan, Chakravarthy
;  TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS
;  FILE REFERENCE: X-10242
;  CURRENT APPLICATION NUMBER: US/09/997,792
;  CURRENT FILING DATE:  2001-11-30
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 3
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
;   NAME/KEY: VARIANT
;   LOCATION: (28)..(28)
;   OTHER INFORMATION: Xaa at position 28 is Lys or absent
;   NAME/KEY: VARIANT
;   LOCATION: (29)..(29)
;   OTHER INFORMATION: Xaa at position 29 is Gly or absent;and, if Xaa at position 28
;   OTHER INFORMATION: absent, Xaa at position 29 must be absen
US-09-997-792-3

  Query Match             43.8%;  Score 32;  DB 9;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 0.22;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 9
US-09-997-792-9
; Sequence 9, Application US/09997792
; Publication No. US20030045464A1
; GENERAL INFORMATION:
;  APPLICANT: Hermeling, Ronald
;  APPLICANT:  Hoffmann, James
;  APPLICANT:  Narasimhan, Chakravarthy
;  TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS
;  FILE REFERENCE: X-10242
;  CURRENT APPLICATION NUMBER: US/09/997,792
;  CURRENT FILING DATE:  2001-11-30
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 9
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
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;   OTHER INFORMATION: synthetic construct
US-09-997-792-9

  Query Match             43.8%;  Score 32;  DB 9;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 0.22;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 10
US-10-169-657-7
; Sequence 7, Application US/10169657
; Publication No. US20030060412A1
; GENERAL INFORMATION:
;  APPLICANT: Eli Lilly and Company
;  TITLE OF INVENTION: Process for Solubilizing Glucagon-Like Peptide 1 Compounds
;  FILE REFERENCE: X-11708
;  CURRENT APPLICATION NUMBER: US/10/169,657
;  CURRENT FILING DATE:  2002-06-28
;  PRIOR APPLICATION NUMBER: US 60/178,438
;  PRIOR FILING DATE: 2000-01-27
;  PRIOR APPLICATION NUMBER: US 60/224,058
;  PRIOR FILING DATE: 2000-08-09
;  NUMBER OF SEQ ID NOS: 36
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 7
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
;   FEATURE:
;   NAME/KEY: VARIANT
;   LOCATION: (1)..(29)
;   OTHER INFORMATION: The last 2 amino acids of GLP-1 (7-37) are deleted
US-10-169-657-7

  Query Match             43.8%;  Score 32;  DB 9;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 0.22;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 11
US-10-125-255-1
; Sequence 1, Application US/10125255
; Patent No. US20020165342A1
; GENERAL INFORMATION:
;  APPLICANT: Galloway, John  A
;  APPLICANT:  Hoffmann, James A
;  TITLE OF INVENTION: Glucagon-Like Insulinotropic Peptides, Compositions and Methods
;  FILE REFERENCE: X-9332E
;  CURRENT APPLICATION NUMBER: US/10/125,255
;  CURRENT FILING DATE:  2002-04-17
;  PRIOR APPLICATION NUMBER: 09/573,809
;  PRIOR FILING DATE: 2000-05-18
;  NUMBER OF SEQ ID NOS: 1
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (30)..(30)
;   OTHER INFORMATION: The arginine residue at position 30 is modified so as to replace
;   OTHER INFORMATION: the terminal carboxyl group with an amine.
US-10-125-255-1

  Query Match             43.8%;  Score 32;  DB 9;  Length 30;
  Best Local Similarity   30.4%;  Pred. No. 0.23;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 12
US-09-834-229A-5
; Sequence 5, Application US/09834229A
; Publication No. US20030022823A1
; GENERAL INFORMATION:
;  APPLICANT: Efendic, Suad
;  TITLE OF INVENTION: USE OF GLP-1 OR ANALOGS IN TREATMENT OF MYOCARDIAL INFARCTION
;  FILE REFERENCE: X-10822A
;  CURRENT APPLICATION NUMBER: US/09/834,229A
;  CURRENT FILING DATE:  2001-04-12
;  PRIOR APPLICATION NUMBER: US 08/915,918
;  PRIOR FILING DATE: 1997-08-21
;  PRIOR APPLICATION NUMBER: US 06/024,980
;  PRIOR FILING DATE: 1996-08-30
;  NUMBER OF SEQ ID NOS: 6
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 5
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
US-09-834-229A-5

  Query Match             43.8%;  Score 32;  DB 9;  Length 30;
  Best Local Similarity   30.4%;  Pred. No. 0.23;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 13
US-09-997-792-10
; Sequence 10, Application US/09997792
; Publication No. US20030045464A1
; GENERAL INFORMATION:
;  APPLICANT: Hermeling, Ronald
;  APPLICANT:  Hoffmann, James
;  APPLICANT:  Narasimhan, Chakravarthy
;  TITLE OF INVENTION: GLUCAGON-LIKE PEPTIDE-1 CRYSTALS
;  FILE REFERENCE: X-10242
;  CURRENT APPLICATION NUMBER: US/09/997,792
;  CURRENT FILING DATE:  2001-11-30
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 10
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
US-09-997-792-10

  Query Match             43.8%;  Score 32;  DB 9;  Length 30;
  Best Local Similarity   30.4%;  Pred. No. 0.23;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23
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RESULT 14
US-10-091-258-4
; Sequence 4, Application US/10091258
; Publication No. US20030073626A1
; GENERAL INFORMATION:
; APPLICANT: Hathaway, David R
; APPLICANT: Coolidge, Thomas R
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATING PERIPHERAL VASCULAR DISEASE
; FILE REFERENCE: RGN-2
; CURRENT APPLICATION NUMBER: US/10/091,258
; CURRENT FILING DATE: 2002-03-05
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: mammalian
US-10-091-258-4

Query Match 43.8%; Score 32; DB 9; Length 30;
Best Local Similarity 30.4%; Pred. No. 0.23;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

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Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23
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RESULT 15
US-10-055-259-4
; Sequence 4, Application US/10055259
; Publication No. US20030091507A1
; GENERAL INFORMATION:
; APPLICANT: Holst, Jens J.
; APPLICANT: Vilsboll, Tina
; TITLE OF INVENTION: GLP-1 AS A DIAGNOSTIC TEST TO DETERMINE Beta-CELL FUNCTION AND TH
; TITLE OF INVENTION: PRESENCE OF THE CONDITION OF IGT AND TYPE-II DIABETES
; FILE REFERENCE: P03987US1
; CURRENT APPLICATION NUMBER: US/10/055,259
; CURRENT FILING DATE: 2002-06-21
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-055-259-4

Query Match 43.8%; Score 32; DB 9; Length 30;
Best Local Similarity 30.4%; Pred. No. 0.23;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

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Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23
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Search completed: July 16, 2003, 13:10:08
Job time : 52 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 16, 2003, 13:01:33 ; Search time 142 Seconds
(without alignments)
177.075 Million cell updates/sec

Title: US-09-757-788A-1
Perfect score: 73
Sequence: 1 HXXGXFTXDXXXXXXXXXXXXFIXXXXXXXXXXXXXXXXX 39

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 4569144 seqs, 644733110 residues

Total number of hits satisfying chosen parameters: 4569144

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Pending_Patents_AA_Main:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	36	49.3	27	16	US-09-206-833-97	Sequence 97, Appl
2	36	49.3	27	16	US-09-206-833-102	Sequence 102, App
3	36	49.3	28	16	US-09-206-833-94	Sequence 94, Appl
4	36	49.3	28	16	US-09-206-833-95	Sequence 95, Appl
5	35	47.9	27	16	US-09-206-833-98	Sequence 98, Appl
6	35	47.9	27	16	US-09-206-833-103	Sequence 103, App
7	35	47.9	27	16	US-09-206-833-104	Sequence 104, App
8	35	47.9	28	16	US-09-206-833-90	Sequence 90, Appl
9	35	47.9	28	16	US-09-206-833-92	Sequence 92, Appl
10	35	47.9	28	16	US-09-206-833-93	Sequence 93, Appl
11	35	47.9	28	16	US-09-206-833-96	Sequence 96, Appl
12	35	47.9	28	16	US-09-206-833-113	Sequence 113, App
13	35	47.9	29	16	US-09-206-833-84	Sequence 84, Appl
14	35	47.9	29	16	US-09-206-833-86	Sequence 86, Appl
15	34	46.6	27	16	US-09-206-833-101	Sequence 101, App
16	34	46.6	27	16	US-09-206-833-108	Sequence 108, App
17	34	46.6	27	16	US-09-206-833-112	Sequence 112, App
18	34	46.6	28	16	US-09-206-833-105	Sequence 105, App
19	34	46.6	28	16	US-09-206-833-106	Sequence 106, App
20	34	46.6	28	16	US-09-206-833-109	Sequence 109, App
21	34	46.6	28	16	US-09-206-833-110	Sequence 110, App
22	34	46.6	28	16	US-09-206-833-111	Sequence 111, App
23	34	46.6	29	16	US-09-206-833-83	Sequence 83, Appl
24	34	46.6	29	16	US-09-206-833-85	Sequence 85, Appl
25	34	46.6	29	16	US-09-206-833-89	Sequence 89, Appl
26	33	45.2	28	16	US-09-206-833-107	Sequence 107, App
27	33	45.2	30	16	US-09-268-578C-15	Sequence 15, Appl
28	33	45.2	31	16	US-09-268-578C-35	Sequence 35, Appl
29	33	45.2	31	18	US-09-400-802A-27	Sequence 27, Appl
30	33	45.2	31	23	US-09-997-792-20	Sequence 20, Appl
31	33	45.2	31	23	US-09-997-792A-17	Sequence 17, Appl
32	32	43.8	24	21	US-09-762-538-8	Sequence 8, Appli
33	32	43.8	25	21	US-09-762-538-7	Sequence 7, Appli
34	32	43.8	26	21	US-09-762-538-6	Sequence 6, Appli
35	32	43.8	27	4	US-08-044-133-7	Sequence 7, Appli
36	32	43.8	27	5	US-08-122-077-1	Sequence 1, Appli
37	32	43.8	27	21	US-09-762-538-5	Sequence 5, Appli
38	32	43.8	27	23	US-09-943-084-7	Sequence 7, Appli
39	32	43.8	28	3	US-07-899-073-5	Sequence 5, Appli
40	32	43.8	28	4	US-08-044-133-5	Sequence 5, Appli
41	32	43.8	28	7	US-08-350-530A-21	Sequence 21, Appl
42	32	43.8	28	7	US-08-356-231-5	Sequence 5, Appli
43	32	43.8	28	9	US-08-520-485-4	Sequence 4, Appli
44	32	43.8	28	12	US-08-860-103-1	Sequence 1, Appli
45	32	43.8	28	12	US-08-860-103A-1	Sequence 1, Appli

ALIGNMENTS

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RESULT 1
US-09-206-833-97
; Sequence 97, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 97
;   LENGTH: 27
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (27)
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;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-97

  Query Match             49.3%;  Score 36;  DB 16;  Length 27;
  Best Local Similarity   34.8%;  Pred. No. 0.13;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSSXLEAAAAAAFI 23


RESULT 2
US-09-206-833-102
; Sequence 102, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 102
;   LENGTH: 27
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (27)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-102

  Query Match             49.3%;  Score 36;  DB 16;  Length 27;
  Best Local Similarity   34.8%;  Pred. No. 0.13;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSSXAEAAAAKAFI 23


RESULT 3
US-09-206-833-94
; Sequence 94, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 94
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (28)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-94

  Query Match             49.3%;  Score 36;  DB 16;  Length 28;
  Best Local Similarity   34.8%;  Pred. No. 0.14;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSSXLAAAAAKAFI 23


RESULT 4
US-09-206-833-95
; Sequence 95, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 95
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (28)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-95

  Query Match             49.3%;  Score 36;  DB 16;  Length 28;
  Best Local Similarity   34.8%;  Pred. No. 0.14;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSSXLEAAAAAAFI 23


RESULT 5
US-09-206-833-98
; Sequence 98, Application US/09206833A
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; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 98
;   LENGTH: 27
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (27)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-98

  Query Match             47.9%;  Score 35;  DB 16;  Length 27;
  Best Local Similarity   34.8%;  Pred. No. 0.25;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSSXLEAAAAKAFI 23


RESULT 6
US-09-206-833-103
; Sequence 103, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 103
;   LENGTH: 27
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (27)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-103

  Query Match             47.9%;  Score 35;  DB 16;  Length 27;
  Best Local Similarity   34.8%;  Pred. No. 0.25;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSSXLEAAAAKAFI 23


RESULT 7
US-09-206-833-104
; Sequence 104, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 104
;   LENGTH: 27
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (27)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-104

  Query Match             47.9%;  Score 35;  DB 16;  Length 27;
  Best Local Similarity   34.8%;  Pred. No. 0.25;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVASXLEAAAAKAFI 23


RESULT 8
US-09-206-833-90
; Sequence 90, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 90
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
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;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (28)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-90

  Query Match             47.9%;  Score 35;  DB 16;  Length 28;
  Best Local Similarity   34.8%;  Pred. No. 0.25;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSSXLEAAAAKAFI 23


RESULT 9
US-09-206-833-92
; Sequence 92, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 92
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (28)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-92

  Query Match             47.9%;  Score 35;  DB 16;  Length 28;
  Best Local Similarity   34.8%;  Pred. No. 0.25;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVASXLEAAAAKAFI 23


RESULT 10
US-09-206-833-93
; Sequence 93, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 93
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (28)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-93

  Query Match             47.9%;  Score 35;  DB 16;  Length 28;
  Best Local Similarity   34.8%;  Pred. No. 0.25;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSAXLEAAAAKAFI 23


RESULT 11
US-09-206-833-96
; Sequence 96, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 96
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (28)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-96

  Query Match             47.9%;  Score 35;  DB 16;  Length 28;
  Best Local Similarity   34.8%;  Pred. No. 0.25;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;
```

```
Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSSXLEAAAAKAFI 23


RESULT 12
US-09-206-833-113
; Sequence 113, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 113
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (10)
;   OTHER INFORMATION: tert-butylglycine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (14)
;   OTHER INFORMATION: tert-butylglycine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (28)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-113

  Query Match             47.9%;  Score 35;  DB 16;  Length 28;
  Best Local Similarity   43.5%;  Pred. No. 0.25;
  Matches   10;  Conservative    0;  Mismatches   13;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || ||  ||       ||
Db          1 HAEGTFTSDXAAXXEAAAAKAFI 23


RESULT 13
US-09-206-833-84
; Sequence 84, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 84
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-84

  Query Match             47.9%;  Score 35;  DB 16;  Length 29;
  Best Local Similarity   34.8%;  Pred. No. 0.26;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDASSXLEGAAAKAFI 23


RESULT 14
US-09-206-833-86
; Sequence 86, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 86
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-86

  Query Match             47.9%;  Score 35;  DB 16;  Length 29;
  Best Local Similarity   34.8%;  Pred. No. 0.26;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |        ||
Db          1 HAEGTFTSDVSSXLEAAAAKAFI 23


RESULT 15
US-09-206-833-101
; Sequence 101, Application US/09206833A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  APPLICANT: COY, DAVID H.
;  TITLE OF INVENTION: GLP-1 ANALOGUES
;  FILE REFERENCE: 00537/187001
;  CURRENT APPLICATION NUMBER: US/09/206,833A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 165
```

```
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 101
;   LENGTH: 27
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (13)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (25)
;   OTHER INFORMATION: beta-(3-pyridinyl)alanine
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (27)
;   OTHER INFORMATION: gamma-aminobutyric acid
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-833-101

  Query Match             46.6%;  Score 34;  DB 16;  Length 27;
  Best Local Similarity   34.8%;  Pred. No. 0.45;
  Matches    8;  Conservative    0;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |   |         ||
Db          1 HAEGTFTSDVSSXLEGAAAKAFI 23


Search completed: July 16, 2003, 13:07:12
Job time : 143 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 16, 2003, 13:02:03 ; Search time 110 Seconds
(without alignments)
93.652 Million cell updates/sec

Title: US-09-757-788A-1
Perfect score: 73
Sequence: 1 HXXGXFTXDXXXXXXXXXXXXFIXXXXXXXXXXXXXXXXX 39

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1231039 seqs, 264146458 residues

Total number of hits satisfying chosen parameters: 1231039

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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3: /cgn2_6/ptodata/2/paa/US06_NEW_COMB.pep:*
4: /cgn2_6/ptodata/2/paa/US06_NEW_COMB.pep4:*
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6: /cgn2_6/ptodata/2/paa/US07_NEW_COMB.pep4:*
7: /cgn2_6/ptodata/2/paa/US08_NEW_COMB.pep:*
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9: /cgn2_6/ptodata/2/paa/US09_NEW_COMB.pep:*
10: /cgn2_6/ptodata/2/paa/US09_NEW_COMB.pep4:*
11: /cgn2_6/ptodata/2/paa/US10_NEW_COMB.pep:*
12: /cgn2_6/ptodata/2/paa/US10_NEW_COMB.pep4:*
13: /cgn2_6/ptodata/2/paa/US60_NEW_COMB.pep:*
14: /cgn2_6/ptodata/2/paa/US60_NEW_COMB.pep4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	32	43.8	28	2	PCT-US02-25227-23	Sequence 23, Appl
2	32	43.8	28	10	US-09-858-880-3	Sequence 3, Appli
3	32	43.8	28	10	US-09-767-981-1	Sequence 1, Appli
4	32	43.8	28	10	US-09-772-607C-2	Sequence 2, Appli
5	32	43.8	28	12	US-10-378-094-7	Sequence 7, Appli
6	32	43.8	28	12	US-10-215-272-23	Sequence 23, Appl
7	32	43.8	28	14	US-60-460-829-7	Sequence 7, Appli
8	32	43.8	29	2	PCT-US02-25227-24	Sequence 24, Appl
9	32	43.8	29	10	US-09-585-186A-3	Sequence 3, Appli
10	32	43.8	29	12	US-10-378-094-8	Sequence 8, Appli
11	32	43.8	29	12	US-10-215-272-24	Sequence 24, Appl
12	32	43.8	29	14	US-60-460-829-8	Sequence 8, Appli
13	32	43.8	30	2	PCT-US02-25227-25	Sequence 25, Appl
14	32	43.8	30	2	PCT-US02-24141-1	Sequence 1, Appli
15	32	43.8	30	2	PCT-US02-24141-4	Sequence 4, Appli
16	32	43.8	30	2	PCT-US02-31693A-2	Sequence 2, Appli
17	32	43.8	30	2	PCT-US02-31693A-9	Sequence 9, Appli
18	32	43.8	30	2	PCT-US02-31693A-10	Sequence 10, Appl
19	32	43.8	30	2	PCT-US03-16643-31	Sequence 31, Appl
20	32	43.8	30	2	PCT-US03-16643-33	Sequence 33, Appl
21	32	43.8	30	2	PCT-US03-16645-4	Sequence 4, Appli
22	32	43.8	30	2	PCT-US03-16645-6	Sequence 6, Appli
23	32	43.8	30	10	US-09-646-433-4	Sequence 4, Appli
24	32	43.8	30	10	US-09-858-880-1	Sequence 1, Appli
25	32	43.8	30	10	US-09-858-880-2	Sequence 2, Appli
26	32	43.8	30	10	US-09-671-773A-3	Sequence 3, Appli
27	32	43.8	30	10	US-09-623-548A-344	Sequence 344, App
28	32	43.8	30	10	US-09-623-548A-355	Sequence 355, App
29	32	43.8	30	10	US-09-585-186A-5	Sequence 5, Appli
30	32	43.8	30	10	US-09-585-186A-9	Sequence 9, Appli
31	32	43.8	30	12	US-10-201-288-28	Sequence 28, Appl
32	32	43.8	30	12	US-10-276-772-27	Sequence 27, Appl
33	32	43.8	30	12	US-10-276-772-28	Sequence 28, Appl
34	32	43.8	30	12	US-10-276-772-29	Sequence 29, Appl
35	32	43.8	30	12	US-10-276-772-30	Sequence 30, Appl
36	32	43.8	30	12	US-10-276-772-31	Sequence 31, Appl
37	32	43.8	30	12	US-10-265-345A-2	Sequence 2, Appli
38	32	43.8	30	12	US-10-265-345A-9	Sequence 9, Appli
39	32	43.8	30	12	US-10-265-345A-10	Sequence 10, Appl
40	32	43.8	30	12	US-10-378-094-48	Sequence 48, Appl
41	32	43.8	30	12	US-10-215-272-25	Sequence 25, Appl
42	32	43.8	30	12	US-10-181-102-3	Sequence 3, Appli
43	32	43.8	30	12	US-10-322-839-4	Sequence 4, Appli
44	32	43.8	30	12	US-10-345-751-2	Sequence 2, Appli
45	32	43.8	30	12	US-10-345-751-9	Sequence 9, Appli

ALIGNMENTS

RESULT 1
PCT-US02-25227-23
; Sequence 23, Application PC/TUS0225227
; GENERAL INFORMATION:
; APPLICANT: Genzyme Corporation
; APPLICANT: Wadsworth, Samuel C.
; APPLICANT: Armentano, Donna
; APPLICANT: Gregory, Richard J.
; APPLICANT: Parsons, Geoffrey
; TITLE OF INVENTION: Methods of Treating Diabetes and Other
; TITLE OF INVENTION: Blood Sugar Disorders
; FILE REFERENCE: 2478.2019002 PCT
; CURRENT APPLICATION NUMBER: PCT/US02/25227
; CURRENT FILING DATE: 2002-08-07
; PRIOR APPLICATION NUMBER: US 60/310,982
; PRIOR FILING DATE: 2001-08-08
; NUMBER OF SEQ ID NOS: 54
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 23
; LENGTH: 28
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Modified GLP-1 molecule; GLP-1 (7-34)
PCT-US02-25227-23

Query Match 43.8%; Score 32; DB 2; Length 28;
Best Local Similarity 30.4%; Pred. No. 1.1;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

```
Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |           ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23
```

RESULT 2
US-09-858-880-3
; Sequence 3, Application US/09858880
; GENERAL INFORMATION:
; APPLICANT: Holmquist, Barton
; APPLICANT: Dormady, Daniel
; TITLE OF INVENTION: Peptide Pharmaceutical Formulations

```
;  FILE REFERENCE: 1627.020US1
;  CURRENT APPLICATION NUMBER: US/09/858,880
;  CURRENT FILING DATE:  2001-05-17
;  PRIOR APPLICATION NUMBER: US 60/205,377
;  PRIOR FILING DATE: 2000-05-17
;  PRIOR APPLICATION NUMBER: US 60/205,262
;  PRIOR FILING DATE: 2000-05-19
;  NUMBER OF SEQ ID NOS: 13
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 3
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: A GLP-1 derivative
US-09-858-880-3

  Query Match             43.8%;  Score 32;. DB 10;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 3
US-09-767-981-1
; Sequence 1, Application US/09767981
; GENERAL INFORMATION:
;  APPLICANT: Ejvind, Jensen
;  APPLICANT:  Jorgensen, Klavs Holger
;  TITLE OF INVENTION: Protracted GLP-1 Compositions
;  FILE REFERENCE: 4343.214-US
;  CURRENT APPLICATION NUMBER: US/09/767,981
;  CURRENT FILING DATE:  2001-01-23
;  PRIOR APPLICATION NUMBER: US 08/860,103
;  PRIOR FILING DATE: 1997-06-17
;  PRIOR APPLICATION NUMBER: Danish Application PA 1478/94
;  PRIOR FILING DATE: 1994-12-23
;  PRIOR APPLICATION NUMBER: PCT/DK99/00263
;  PRIOR FILING DATE: 1995-12-21
;  NUMBER OF SEQ ID NOS: 1
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 1
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-767-981-1

  Query Match             43.8%;  Score 32;  DB 10;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 4
US-09-772-607C-2
; Sequence 2, Application US/09772607C
; GENERAL INFORMATION:
;  APPLICANT: Jonassen, Ib
;  APPLICANT:  Havelund, Svend
;  APPLICANT:  Hansen, Per Hertz
;  APPLICANT:  Kurtzhals, Peter
;  APPLICANT:  Halstrom, John B.
;  TITLE OF INVENTION: Peptide Derivatives
;  FILE REFERENCE: 4409.214-US
;  CURRENT APPLICATION NUMBER: US/09/772,607C
;  CURRENT FILING DATE:  2001-01-30
;  PRIOR APPLICATION NUMBER: US 09/068,822
;  PRIOR FILING DATE: 1998-05-14
;  PRIOR APPLICATION NUMBER: PCT/DK96/00106
;  PRIOR FILING DATE: 1996-03-18
;  PRIOR APPLICATION NUMBER: DK 275/95
;  PRIOR FILING DATE: 1995-03-18
;  NUMBER OF SEQ ID NOS: 14
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 2
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: LOCATION :28
;   OTHER INFORMATION: Lys at position 28 is modified with Nepsilon-gamma- Glu(Nalpha
;   OTHER INFORMATION: tetradecanoyl)-OH)
US-09-772-607C-2

  Query Match             43.8%;  Score 32;  DB 10;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 5
US-10-378-094-7
; Sequence 7, Application US/10378094
; GENERAL INFORMATION:
;  APPLICANT: PRIOR, Christopher P.
;  APPLICANT:  LAI, Char-Huei
;  APPLICANT:  SADEGHI, Homayoun
;  APPLICANT:  TURNER, Andrew
;  TITLE OF INVENTION: MODIFIED TRANSFERRIN FUSION PROTEINS
;  FILE REFERENCE: 54710-5001-01-US
;  CURRENT APPLICATION NUMBER: US/10/378,094
;  CURRENT FILING DATE:  2003-03-04
;  PRIOR APPLICATION NUMBER: US 10/231,494
;  PRIOR FILING DATE: 2002-08-30
;  PRIOR APPLICATION NUMBER: US 60/334,059
;  PRIOR FILING DATE: 2001-11-30
;  PRIOR APPLICATION NUMBER: US 60/315,745
;  PRIOR FILING DATE: 2001-08-30
;  NUMBER OF SEQ ID NOS: 66
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 7
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial sequence
;   FEATURE:
;   OTHER INFORMATION: GLP-1 molecule having insulinotropic activity
US-10-378-094-7

  Query Match             43.8%;  Score 32;  DB 12;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 6
US-10-215-272-23
; Sequence 23, Application US/10215272
; GENERAL INFORMATION:
;  APPLICANT: Genzyme Corporation
;  APPLICANT:  Wadsworth, Samuel C.
;  APPLICANT:  Armentano, Donna
```

```
;  APPLICANT:  Gregory, Richard J.
;  APPLICANT:  Parsons, Geoffrey
;  TITLE OF INVENTION: Methods of Treating Diabetes and Other
;  TITLE OF INVENTION:  Blood Sugar Disorders
;  FILE REFERENCE: 2478.2019002 PCT
;  CURRENT APPLICATION NUMBER: US/10/215,272
;  CURRENT FILING DATE:  2002-08-07
;  PRIOR APPLICATION NUMBER: US 60/310,982
;  PRIOR FILING DATE: 2001-08-08
;  NUMBER OF SEQ ID NOS: 54
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 23
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Modified GLP-1 molecule; GLP-1 (7-34)
US-10-215-272-23

  Query Match             43.8%;  Score 32;  DB 12;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 7
US-60-460-829-7
; Sequence 7, Application US/60460829
; GENERAL INFORMATION:
;  APPLICANT: PRIOR, Christopher P.
;  APPLICANT:  SADEGHI, Homayoun
;  APPLICANT:  TURNER, Andrew
;  TITLE OF INVENTION: ORAL DELIVERY OF MODIFIED TRANSFERRIN FUSION PROTEINS
;  FILE REFERENCE: 54710-5006-PR
;  CURRENT APPLICATION NUMBER: US/60/460,829
;  CURRENT FILING DATE:  2003-04-08
;  PRIOR APPLICATION NUMBER: US 10/378,094
;  PRIOR FILING DATE: 2003-03-04
;  PRIOR APPLICATION NUMBER: US 10/231,494
;  PRIOR FILING DATE: 2002-08-30
;  PRIOR APPLICATION NUMBER: US 60/334,059
;  PRIOR FILING DATE: 2001-11-30
;  PRIOR APPLICATION NUMBER: US 60/315,745
;  PRIOR FILING DATE: 2001-08-30
;  NUMBER OF SEQ ID NOS: 46
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 7
;   LENGTH: 28
;   TYPE: PRT
;   ORGANISM: Artificial sequence
;   FEATURE:
;   OTHER INFORMATION: GLP-1 molecule having insulinotropic activity
US-60-460-829-7

  Query Match             43.8%;  Score 32;  DB 14;  Length 28;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 8
PCT-US02-25227-24
; Sequence 24, Application PC/TUS0225227
; GENERAL INFORMATION:
;  APPLICANT: Genzyme Corporation
;  APPLICANT:  Wadsworth, Samuel C.
;  APPLICANT:  Armentano, Donna
;  APPLICANT:  Gregory, Richard J.
;  APPLICANT:  Parsons, Geoffrey
;  TITLE OF INVENTION: Methods of Treating Diabetes and Other
;  TITLE OF INVENTION:  Blood Sugar Disorders
;  FILE REFERENCE: 2478.2019002 PCT
;  CURRENT APPLICATION NUMBER: PCT/US02/25227
;  CURRENT FILING DATE:  2002-08-07
;  PRIOR APPLICATION NUMBER: US 60/310,982
;  PRIOR FILING DATE: 2001-08-08
;  NUMBER OF SEQ ID NOS: 54
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 24
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Modified GLP-1 molecule; GLP-1 (7-35)
PCT-US02-25227-24

  Query Match             43.8%;  Score 32;  DB 2;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            |-|
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 9
US-09-585-186A-3
; Sequence 3, Application US/09585186A
; GENERAL INFORMATION:
;  APPLICANT: DiMarchi, Richard D.
;  APPLICANT:  Suad, Efendic
;  TITLE OF INVENTION: Use of GLP-1 Analogs and Derivatives Administered Peripherally
;  TITLE OF INVENTION:  regulation of Obesity
;  FILE REFERENCE: X-10910A
;  CURRENT APPLICATION NUMBER: US/09/585,186A
;  CURRENT FILING DATE:  2000-06-01
;  PRIOR APPLICATION NUMBER: US 60/030,213
;  PRIOR FILING DATE: 1997-10-30
;  NUMBER OF SEQ ID NOS: 9
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic Construct
;   FEATURE:
;   NAME/KEY: MISC_FEATURE
;   LOCATION: (29)..(29)
;   OTHER INFORMATION: Xaa at position 29 is Gly or is absent.
US-09-585-186A-3

  Query Match             43.8%;  Score 32;  DB 10;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 10
US-10-378-094-8
; Sequence 8, Application US/10378094
; GENERAL INFORMATION:
;  APPLICANT: PRIOR, Christopher P.
;  APPLICANT:  LAI, Char-Huei
;  APPLICANT:  SADEGHI, Homayoun
;  APPLICANT:  TURNER, Andrew
;  TITLE OF INVENTION: MODIFIED TRANSFERRIN FUSION PROTEINS
```

```
;  FILE REFERENCE: 54710-5001-01-US
;  CURRENT APPLICATION NUMBER: US/10/378,094
;  CURRENT FILING DATE:  2003-03-04
;  PRIOR APPLICATION NUMBER: US 10/231,494
;  PRIOR FILING DATE: 2002-08-30
;  PRIOR APPLICATION NUMBER: US 60/334,059
;  PRIOR FILING DATE: 2001-11-30
;  PRIOR APPLICATION NUMBER: US 60/315,745
;  PRIOR FILING DATE: 2001-08-30
;  NUMBER OF SEQ ID NOS: 66
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 8
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial sequence
;   FEATURE:
;   OTHER INFORMATION: GLP-1 molecule having insulinotropic activity
US-10-378-094-8

  Query Match             43.8%;  Score 32;  DB 12;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 11
US-10-215-272-24
; Sequence 24, Application US/10215272
; GENERAL INFORMATION:
;  APPLICANT: Genzyme Corporation
;  APPLICANT:  Wadsworth, Samuel C.
;  APPLICANT:  Armentano, Donna
;  APPLICANT:  Gregory, Richard J.
;  APPLICANT:  Parsons, Geoffrey
;  TITLE OF INVENTION: Methods of Treating Diabetes and Other
;  TITLE OF INVENTION:  Blood Sugar Disorders
;  FILE REFERENCE: 2478.2019002 PCT
;  CURRENT APPLICATION NUMBER: US/10/215,272
;  CURRENT FILING DATE:  2002-08-07
;  PRIOR APPLICATION NUMBER: US 60/310,982
;  PRIOR FILING DATE: 2001-08-08
;  NUMBER OF SEQ ID NOS: 54
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 24
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Modified GLP-1 molecule; GLP-1 (7-35)
US-10-215-272-24

  Query Match             43.8%;  Score 32;  DB 12;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 12
US-60-460-829-8
; Sequence 8, Application US/60460829
; GENERAL INFORMATION:
;  APPLICANT: PRIOR, Christopher P.
;  APPLICANT:  SADEGHI, Homayoun
;  APPLICANT:  TURNER, Andrew
;  TITLE OF INVENTION: ORAL DELIVERY OF MODIFIED TRANSFERRIN FUSION PROTEINS
;  FILE REFERENCE: 54710-5006-PR
;  CURRENT APPLICATION NUMBER: US/60/460,829
;  CURRENT FILING DATE:  2003-04-08
;  PRIOR APPLICATION NUMBER: US 10/378,094
;  PRIOR FILING DATE: 2003-03-04
;  PRIOR APPLICATION NUMBER: US 10/231,494
;  PRIOR FILING DATE: 2002-08-30
;  PRIOR APPLICATION NUMBER: US 60/334,059
;  PRIOR FILING DATE: 2001-11-30
;  PRIOR APPLICATION NUMBER: US 60/315,745
;  PRIOR FILING DATE: 2001-08-30
;  NUMBER OF SEQ ID NOS: 46
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 8
;   LENGTH: 29
;   TYPE: PRT
;   ORGANISM: Artificial sequence
;   FEATURE:
;   OTHER INFORMATION: GLP-1 molecule having insulinotropic activity
US-60-460-829-8

  Query Match             43.8%;  Score 32;  DB 14;  Length 29;
  Best Local Similarity   30.4%;  Pred. No. 1.1;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 13
PCT-US02-25227-25
; Sequence 25, Application PC/TUS0225227
; GENERAL INFORMATION:
;  APPLICANT: Genzyme Corporation
;  APPLICANT:  Wadsworth, Samuel C.
;  APPLICANT:  Armentano, Donna
;  APPLICANT:  Gregory, Richard J.
;  APPLICANT:  Parsons, Geoffrey
;  TITLE OF INVENTION: Methods of Treating Diabetes and Other
;  TITLE OF INVENTION:  Blood Sugar Disorders
;  FILE REFERENCE: 2478.2019002 PCT
;  CURRENT APPLICATION NUMBER: PCT/US02/25227
;  CURRENT FILING DATE:  2002-08-07
;  PRIOR APPLICATION NUMBER: US 60/310,982
;  PRIOR FILING DATE: 2001-08-08
;  NUMBER OF SEQ ID NOS: 54
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 25
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Modified GLP-1 molecule; GLP-1 (7-36)
PCT-US02-25227-25

  Query Match             43.8%;  Score 32;  DB 2;  Length 30;
  Best Local Similarity   30.4%;  Pred. No. 1.2;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 14
PCT-US02-24141-1
; Sequence 1, Application PC/TUS0224141
; GENERAL INFORMATION:
;  APPLICANT: The Government of the United States of America, as represented by the
;  APPLICANT:  Secretary, Department of Health and Human Services
;  APPLICANT:  Greig, Nigel H.
;  APPLICANT:  Egan, Josephine
;  APPLICANT:  Doyle, Maire
;  APPLICANT:  Holloway, Harold
```

```
;  TITLE OF INVENTION: GLP-1, EXENDIN-4, AND PEPTIDE ANALOGS AND USES THEREOF
;  FILE REFERENCE: 14014.0396P1
;  CURRENT APPLICATION NUMBER: PCT/US02/24141
;  CURRENT FILING DATE:  2002-07-30
;  PRIOR APPLICATION NUMBER: 60/309,076
;  PRIOR FILING DATE: 2001-07-31
;  NUMBER OF SEQ ID NOS: 52
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 1
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Human
PCT-US02-24141-1

  Query Match             43.8%;  Score 32;  DB 2;  Length 30;
  Best Local Similarity   30.4%;  Pred. No. 1.2;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


RESULT 15
PCT-US02-24141-4
; Sequence 4, Application PC/TUS0224141
; GENERAL INFORMATION:
;  APPLICANT: The Government of the United States of America, as represented by the
;  APPLICANT:  Secretary, Department of Health and Human Services
;  APPLICANT:  Greig, Nigel H.
;  APPLICANT:  Egan, Josephine
;  APPLICANT:  Doyle, Maire
;  APPLICANT:  Holloway, Harold
;  TITLE OF INVENTION: GLP-1, EXENDIN-4, AND PEPTIDE ANALOGS AND USES THEREOF
;  FILE REFERENCE: 14014.0396P1
;  CURRENT APPLICATION NUMBER: PCT/US02/24141
;  CURRENT FILING DATE:  2002-07-30
;  PRIOR APPLICATION NUMBER: 60/309,076
;  PRIOR FILING DATE: 2001-07-31
;  NUMBER OF SEQ ID NOS: 52
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 4
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence:/Note =
;   OTHER INFORMATION: Synthetic Construct
PCT-US02-24141-4

  Query Match             43.8%;  Score 32;  DB 2;  Length 30;
  Best Local Similarity   30.4%;  Pred. No. 1.2;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |            ||
Db          1 HAEGTFTSDVSSYLEGQAAKEFI 23


Search completed: July 16, 2003, 13:09:09
Job time : 110 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 16, 2003, 12:59:42 ; Search time 39 Seconds
(without alignments)
96.134 Million cell updates/sec

Title: US-09-757-788A-1
Perfect score: 73
Sequence: 1 HXXGXFTXDXXXXXXXXXXXXFIXXXXXXXXXXXXXXXXX 39

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	32	43.8	158	1	GCPG	glucagon precursor
2	32	43.8	180	1	GCHU	glucagon precursor
3	32	43.8	180	1	GCGP	glucagon precursor
4	32	43.8	180	1	GCRTDU	glucagon precursor
5	32	43.8	180	1	GCRT	glucagon precursor
6	32	43.8	180	1	GCHY	glucagon precursor
7	32	43.8	180	1	GCBO	glucagon precursor
8	32	43.8	180	2	A57294	glucagon precursor
9	31	42.5	101	1	GCFGB	glucagon precursor
10	30	41.1	29	1	GCCB	glucagon - Chinchi
11	30	41.1	29	1	GCOPV	glucagon - North A
12	30	41.1	29	1	GCDK	glucagon - duck
13	30	41.1	29	1	A61583	glucagon - ostrich
14	30	41.1	29	1	GCDF	glucagon - smaller
15	30	41.1	29	1	GCTTS	glucagon - slider
16	30	41.1	29	2	A91740	glucagon - turkey
17	30	41.1	29	2	A91741	glucagon - rabbit
18	30	41.1	29	2	A91742	glucagon - Arabian
19	30	41.1	29	2	S07211	glucagon - marbled
20	30	41.1	29	2	C39258	glucagon - common
21	30	41.1	30	2	S44473	glucagon-like pept
22	30	41.1	39	1	HWGH3Z	exendin-3 - Mexica
23	30	41.1	69	1	GCDG69	glucagon-69 - dog
24	30	41.1	87	1	GCFIS	glucagon precursor
25	30	41.1	124	1	GCAF	glucagon 1 precurs
26	30	41.1	151	1	GCCH	glucagon precursor
27	30	41.1	155	2	B64750	ykfB protein - Esc
28	30	41.1	206	2	I51301	proglucagon - chic
29	29	39.7	29	2	C60840	glucagon I - Europ
30	29	39.7	29	2	S39018	glucagon - bowfin
31	29	39.7	36	2	D60840	glucagon II - Euro
32	29	39.7	39	1	HWGH4G	exendin-4 - Gila m
33	29	39.7	55	1	VRRB	vasoactive intesti
34	29	39.7	55	1	VRBO	vasoactive intesti
35	29	39.7	55	1	VRSH	vasoactive intesti
36	29	39.7	55	1	VRGP	vasoactive intesti
37	29	39.7	58	1	VRPG	vasoactive intesti
38	29	39.7	63	1	GCIDC	glucagon precursor
39	29	39.7	72	1	GCGXA	glucagon precursor
40	29	39.7	145	2	A60038	vasoactive intesti
41	29	39.7	170	1	VRHU	vasoactive intesti
42	29	39.7	170	1	VRRT	vasoactive intesti
43	29	39.7	170	2	A60037	vasoactive intesti
44	29	39.7	178	2	I51058	glucagon I precurs
45	29	39.7	178	2	I51057	glucagon II precur

ALIGNMENTS

RESULT 1
GCPG
glucagon precursor - pig (fragment)
N;Alternate names: glicentin; oxyntomodulin
N;Contains: glicentin-related peptide; glucagon; glucagon-37 (oxyntomodulin); glucago
C;Species: Sus scrofa domestica (domestic pig)
C;Date: 17-Dec-1982 #sequence_revision 31-Mar-1993 #text_change 20-Mar-1998
C;Accession: A01540; A60312; A91781; B32614; A28064
R;Thim, L.; Moody, A.J.
Regul. Pept. 2, 139-150, 1981
A;Title: The primary structure of porcine glicentin (proglucagon).
A;Reference number: A94233; MUID:81248172; PMID:6894800
A;Accession: A01540
A;Molecule type: protein
A;Residues: 1-69 <TH1>
R;Thim, L.; Moody, A.J.
Regul. Pept. Suppl. 2, S33, 1983
A;Title: Primary structure of a possible porcine proglucagon fragment.
A;Reference number: A60312
A;Accession: A60312
A;Molecule type: protein
A;Residues: 1-30 <TH2>
A;Note: this peptide is co-secreted with glucagon from the pancreas
R;Bromer, W.W.; Sinn, L.G.; Behrens, O.K.
J. Am. Chem. Soc. 79, 2807-2810, 1957
A;Title: The amino acid sequence of glucagon. V. Location of amide groups, acid degra
A;Reference number: A91781
A;Accession: A91781
A;Molecule type: protein
A;Residues: 33-61 <BRO>
R;Orskov, C.; Bersani, M.; Johnsen, A.H.; Hojrup, P.; Holst, J.J.
J. Biol. Chem. 264, 12826-12829, 1989
A;Title: Complete sequences of glucagon-like peptide-1 from human and pig small intes
A;Reference number: A92732; MUID:89327238; PMID:2753890
A;Accession: B32614
A;Molecule type: protein
A;Residues: 78-107 <ORS>
R;Buhl, T.; Thim, L.; Kofod, H.; Orskov, C.; Harling, H.; Holst, J.J.
J. Biol. Chem. 263, 8621-8624, 1988
A;Title: Naturally occurring products of proglucagon 111-160 in the porcine and human
A;Reference number: A28064; MUID:88243712; PMID:3379036
A;Accession: A28064
A;Molecule type: protein
A;Residues: 111-158 <BUH>
C;Comment: X's represent missing amino acids, mostly basic, that are predicted to exi
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; int
F;1-69/Product: glucagon-69 #status experimental <G69>
F;1-30/Region: glicentin-related peptide #status experimental
F;33-69/Product: glucagon-37 #status predicted <G37>
F;33-61/Product: glucagon #status experimental <GCN>
F;78-107/Product: glucagon-like peptide 1 #status experimental <GL1>

F;126-158/Product: glucagon-like peptide 2 #status experimental <GL2>
F;107/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl

Query Match 43.8%; Score 32; DB 1; Length 158;
Best Local Similarity 30.4%; Pred. No. 0.87;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

```
Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db         78 HAEGTFTSDVSSYLEGQAAKEFI 100
```

RESULT 2
GCHU
glucagon precursor [validated] - human
N;Contains: glicentin; glicentin-related polypeptide (GRPP); glucagon; glucagon-like pep
ke peptide 1 (tGLP1)
C;Species: Homo sapiens (man)
C;Date: 24-Apr-1984 #sequence_revision 31-Mar-1993 #text_change 08-Dec-2000
C;Accession: A24377; A44197; A30875; A32614; A01541; S23309
R;White, J.W.; Saunders, G.F.
Nucleic Acids Res. 14, 4719-4730, 1986
A;Title: Structure of the human glucagon gene.
A;Reference number: A24377; MUID:86259053; PMID:3725587
A;Accession: A24377
A;Molecule type: DNA
A;Residues: 1-180 <WHI>
A;Cross-references: GB:X03991
R;Bell, G.I.; Sanchez-Pescador, R.; Laybourn, P.J.; Najarian, R.C.
Nature 304, 368-371, 1983
A;Title: Exon duplication and divergence in the human preproglucagon gene.
A;Reference number: A44197; MUID:83271477; PMID:6877358
A;Accession: A44197
A;Molecule type: DNA
A;Residues: 1-179 <BEL>
A;Cross-references: GB:V01515; NID:g31777; PIDN:CAA24759.1; PID:g31778
R;Drucker, D.J.; Asa, S.
J. Biol. Chem. 263, 13475-13478, 1988
A;Title: Glucagon gene expression in vertebrate brain.
A;Reference number: A30875; MUID:88330860; PMID:2901414
A;Accession: A30875
A;Molecule type: mRNA
A;Residues: 1-180 <DRU>
A;Cross-references: GB:J04040; NID:g183269; PIDN:AAA52567.1; PID:g183270
R;Orskov, C.; Bersani, M.; Johnsen, A.H.; Hojrup, P.; Holst, J.J.
J. Biol. Chem. 264, 12826-12829, 1989
A;Title: Complete sequences of glucagon-like peptide-1 from human and pig small intestin
A;Reference number: A92732; MUID:89327238; PMID:2753890
A;Accession: A32614
A;Molecule type: protein
A;Residues: 98-127 <ORS>
R;Thomsen, J.; Kristiansen, K.; Brunfeldt, K.; Sundby, F.
FEBS Lett. 21, 315-319, 1972
A;Title: The amino acid sequence of human glucagon.
A;Reference number: A91373
A;Accession: A01541
A;Molecule type: protein
A;Residues: 53-81 <THO>
R;Tsugita, A.; Takamoto, K.; Kamo, M.; Iwadate, H.
Eur. J. Biochem. 206, 691-696, 1992
A;Title: C-terminal sequencing of protein. A novel partial acid hydrolysis and analysis
A;Reference number: S23188; MUID:92298996; PMID:1606956
A;Accession: S23309
A;Molecule type: protein
A;Residues: 53-81 <TSU>
C;Comment: In pancreatic alpha-cells, proglucagon is processed to glicentin-related poly
stinal L cells, proglucagon is processed to truncated glucagon-like peptide 1, glucagon-
dulin.
C;Genetics:
A;Gene: GDB:GCG
A;Cross-references: GDB:119265; OMIM:138030
A;Map position: 2q36-2q37
A;Introns: 31/2; 85/2; 131/2; 179/2

C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; int
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status experimental <PGC>
F;21-89/Product: glicentin #status experimental <GLN>
F;21-50/Product: glicentin-related polypeptide #status predicted <GRPP>
F;53-89/Product: oxyntomodulin #status experimental <OXN>
F;53-81/Product: glucagon #status experimental <GCN>
F;92-178/Product: major proglucagon fragment #status experimental <MPGF>
F;92-127/Product: glucagon-like peptide 1 #status experimental <GL1>
F;98-127/Product: truncated glucagon-like peptide 1 #status experimental <TGL>
F;146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following

Query Match 43.8%; Score 32; DB 1; Length 180;
Best Local Similarity 30.4%; Pred. No. 0.99;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

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Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120
```

RESULT 3
GCGP
glucagon precursor - guinea pig
N;Alternate names: oxyntomodulin
N;Contains: glicentin-related peptide; glucagon; glucagon-37 (oxyntomodulin); glucago
C;Species: Cavia porcellus (guinea pig)
C;Date: 30-Sep-1987 #sequence_revision 31-Dec-1992 #text_change 16-Jun-2000
C;Accession: A24856; A23849; A60323
R;Seino, S.; Welsh, M.; Bell, G.I.; Chan, S.J.; Steiner, D.F.
FEBS Lett. 203, 25-30, 1986
A;Title: Mutations in the guinea pig preproglucagon gene are restricted to a specific
A;Reference number: A24856; MUID:86248118; PMID:3755107
A;Accession: A24856
A;Molecule type: mRNA
A;Residues: 1-180 <SEI>
A;Cross-references: DDBJ:D00014; GB:N00014; NID:g220288; PIDN:BAA00010.1; PID:g220289
R;Huang, C.G.; Eng, J.; Pan, Y.C.E.; Hulmes, J.D.; Yalow, R.S.
Diabetes 35, 508-512, 1986
A;Title: Guinea pig glucagon differs from other mammalian glucagons.
A;Reference number: A23849; MUID:86165412; PMID:3956884
A;Accession: A23849
A;Molecule type: protein
A;Residues: 53-81 <HUA>
R;Conlon, J.M.; Hansen, H.F.; Schwartz, T.W.
Regul. Pept. 11, 309-320, 1985
A;Title: Primary structure of glucagon and a partial sequence of oxyntomodulin (gluca
A;Reference number: A60323; MUID:86017849; PMID:4048553
A;Accession: A60323
A;Molecule type: protein
A;Residues: 53-81 <CON>
A;Note: glucagon-37 was not completely sequenced
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pan
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-89/Product: glucagon-37 (oxyntomodulin) #status experimental <G37>
F;53-81/Product: glucagon #status experimental <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following

Query Match 43.8%; Score 32; DB 1; Length 180;
Best Local Similarity 30.4%; Pred. No. 0.99;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

```
Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120
```

```
RESULT 4
GCRTDU
glucagon precursor - degu
N;Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-like
C;Species: Octodon degus (degu)
C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 18-Jun-1999
C;Accession: C36118
R;Nishi, M.; Steiner, D.F.
Mol. Endocrinol. 4, 1192-1198, 1990
A;Title: Cloning of complementary DNAs encoding islet amyloid polypeptide, insulin, and
A;Reference number: A36118; MUID:91155952; PMID:2293024
A;Accession: C36118
A;Molecule type: mRNA
A;Residues: 1-180 <NIS>
A;Cross-references: GB:M57688; NID:g202467; PIDN:AAA40588.1; PID:g202468
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancre
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-81/Product: glucagon #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.99;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 5
GCRT
glucagon precursor - rat
N;Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-like
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Sep-1987 #sequence_revision 30-Sep-1987 #text_change 26-Feb-1999
C;Accession: A22655; A25190; A44198
R;Heinrich, G.; Gros, P.; Habener, J.F.
J. Biol. Chem. 259, 14082-14087, 1984
A;Title: Glucagon gene sequence: four of six exons encode separate functional domains of
A;Reference number: A22655; MUID:85054853; PMID:6094539
A;Accession: A22655
A;Molecule type: DNA
A;Residues: 1-180 <HEI>
A;Cross-references: EMBL:K02809
A;Note: the authors translated the codon TTG for residue 10 as Glu and ACC for residue 5
R;Mojsov, S.; Heinrich, G.; Wilson, I.B.; Ravazzola, M.; Orci, L.; Habener, J.F.
J. Biol. Chem. 261, 11880-11889, 1986
A;Title: Preproglucagon gene expression in pancreas and intestine diversifies at the lev
A;Reference number: A25190; MUID:86304324; PMID:3528148
A;Accession: A25190
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-180 <MOJ>
R;Heinrich, G.; Gros, P.; Lund, P.K.; Bentley, R.C.; Habener, J.F.
Endocrinology 115, 2176-2181, 1984
A;Title: Pre-proglucagon messenger ribonucleic acid: nucleotide and encoded amino acid s
A;Reference number: A44198; MUID:85051023; PMID:6548696
A;Accession: A44198
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-180 <HE2>
A;Cross-references: GB:K02809; GB:K02810; GB:K02811; GB:K02812
C;Genetics:
A;Introns: 31/2; 85/2; 131/2; 179/2
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancre
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-81/Product: glucagon #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-180/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.99;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 6
GCHY
glucagon precursor - golden hamster
N;Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-li
C;Species: Mesocricetus auratus (golden hamster)
C;Date: 13-Jun-1983 #sequence_revision 13-Jun-1983 #text_change 20-Mar-1998
C;Accession: A01539
R;Bell, G.I.; Santerre, R.F.; Mullenbach, G.T.
Nature 302, 716-718, 1983
A;Title: Hamster preproglucagon contains the sequence of glucagon and two related pep
A;Reference number: A01539; MUID:83167563; PMID:6835407
A;Accession: A01539
A;Molecule type: mRNA
A;Residues: 1-180 <BEL>
A;Cross-references: EMBL:J00059
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pan
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-81/Product: glucagon #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-180/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.99;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 7
GCBO
glucagon precursor - bovine
N;Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-li
C;Species: Bos primigenius taurus (cattle)
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 20-Mar-1998
C;Accession: A93970; A92081; A01538
R;Lopez, L.C.; Frazier, M.L.; Su, C.J.; Kumar, A.; Saunders, G.F.
Proc. Natl. Acad. Sci. U.S.A. 80, 5485-5489, 1983
A;Title: Mammalian pancreatic preproglucagon contains three glucagon-related peptides
A;Reference number: A93970; MUID:83299996; PMID:6577439
A;Accession: A93970
A;Molecule type: mRNA
A;Residues: 1-180 <LOP>
A;Cross-references: EMBL:K00107
R;Bromer, W.W.; Boucher, M.E.; Koffenberger Jr., J.E.
J. Biol. Chem. 246, 2822-2827, 1971
A;Title: Amino acid sequence of bovine glucagon.
A;Reference number: A92081; MUID:71166445; PMID:5102927
A;Accession: A92081
A;Molecule type: protein
A;Residues: 53-81 <BRO>
C;Superfamily: glucagon
```

```
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancre
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-81/Product: glucagon #status experimental <GCN>
F;98-127/Product: glucagon-like peptide 1 #status experimental <GL1>
F;146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.99;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 8
A57294
glucagon precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 16-Jul-1999
C;Accession: A57294; S49903
R;Rothenberg, M.E.; Eilertson, C.D.; Klein, K.; Zhou, Y.; Lindberg, I.; McDonald, J.K.;
J. Biol. Chem. 270, 10136-10146, 1995
A;Title: Processing of mouse proglucagon by recombinant prohormone convertase 1 and immu
A;Reference number: A57294; MUID:95247722; PMID:7730317
A;Accession: A57294
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-180 <ROT>
A;Cross-references: EMBL:Z46845; NID:g599880; PIDN:CAA86902.1; PID:g599881
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas

  Query Match             43.8%;  Score 32;  DB 2;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.99;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 9
GCFGB
glucagon precursor - bullfrog (fragments)
N;Alternate names: oxyntomodulin
N;Contains: glucagon; glucagon-36 (oxyntomodulin); glucagon-like peptide 1; glucagon-lik
C;Species: Rana catesbeiana (bullfrog)
C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 20-Mar-1998
C;Accession: B28091; C28091; D28091
R;Pollock, H.G.; Hamilton, J.W.; Rouse, J.B.; Ebner, K.E.; Rawitch, A.B.
J. Biol. Chem. 263, 9746-9751, 1988
A;Title: Isolation of peptide hormones from the pancreas of the bullfrog (Rana catesbeia
A;Reference number: A92730; MUID:88257102; PMID:3260236
A;Accession: B28091
A;Molecule type: protein
A;Residues: 1-36 <PO2>
A;Accession: C28091
A;Molecule type: protein
A;Residues: 37-68 <POL>
A;Accession: D28091
A;Molecule type: protein
A;Residues: 69-101 <PO3>
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas
F;1-36/Product: glucagon-36 (oxyntomodulin) #status experimental <G36>
F;1-29/Product: glucagon #status predicted <GCN>
F;37-67/Product: glucagon-like peptide 1 #status experimental <GL1>
F;69-101/Product: glucagon-like peptide 2 #status experimental <GL2>

  Query Match             42.5%;  Score 31;  DB 1;  Length 101;
  Best Local Similarity   26.1%;  Pred. No. 1;
  Matches    6;  Conservative    1;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            |:
Db         37 HADGTFTSDMSSYLEEKAAKEFV 59


RESULT 10
GCCB
glucagon - Chinchilla brevicaudata
C;Species: Chinchilla brevicaudata, Chinchilla lanigera brevicaudata
C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 20-Mar-1998
C;Accession: A60413
R;Eng, J.; Kleinman, W.A.; Chu, L.S.
Peptides 11, 683-685, 1990
A;Title: Purification of peptide hormones from chinchilla pancreas by chemical assay.
A;Reference number: A60413; MUID:91045327; PMID:2235678
A;Accession: A60413
A;Molecule type: protein
A;Residues: 1-29 <ENG>
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas

  Query Match             41.1%;  Score 30;  DB 1;  Length 29;
  Best Local Similarity   55.6%;  Pred. No. 0.52;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db          1 HSQGTFTSD 9


RESULT 11
GCOPV
glucagon - North American opossum
C;Species: Didelphis virginiana, Didelphis marsupialis virginiana (North American opo
C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 20-Mar-1998
C;Accession: JQ0364
R;Yu, J.H.; Eng, J.; Rattan, S.; Yalow, R.S.
Peptides 10, 1195-1197, 1989
A;Title: Opossum insulin, glucagon and pancreatic polypeptide: amino acid sequences.
A;Reference number: JQ0362; MUID:90160042; PMID:2695899
A;Accession: JQ0364
A;Molecule type: protein
A;Residues: 1-29 <YUJ>
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas

  Query Match             41.1%;  Score 30;  DB 1;  Length 29;
  Best Local Similarity   55.6%;  Pred. No. 0.52;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db          1 HSQGTFTSD 9


RESULT 12
GCDK
glucagon - duck
C;Species: Anas platyrhynchos (domestic duck)
C;Date: 13-Jul-1981 #sequence_revision 13-Jul-1981 #text_change 20-Mar-1998
C;Accession: A01542
R;Sundby, F.; Frandsen, E.K.; Thomsen, J.; Kristiansen, K.; Brunfeldt, K.
FEBS Lett. 26, 289-293, 1972
A;Title: Crystallization and amino acid sequence of duck glucagon.
A;Reference number: A91384; MUID:73049475; PMID:4636745
A;Accession: A01542
A;Molecule type: protein
A;Residues: 1-29 <SUN>
A;Experimental source: Pekin breed
```

C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas

  Query Match 41.1%; Score 30; DB 1; Length 29;
  Best Local Similarity 55.6%; Pred. No. 0.52;
  Matches 5; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 HXXGXFTXD 9
  | | || |
Db 1 HSQGTFTSD 9

RESULT 13
A61583
glucagon - ostrich
C;Species: Struthio camelus (ostrich)
C;Date: 28-Oct-1994 #sequence_revision 06-Jan-1995 #text_change 20-Mar-1998
C;Accession: A61583
R;Ferreira, A.; Litthauer, D.; Saayman, H.; Oelofsen, W.; Crabb, J.; Lazure, C.
Int. J. Pept. Protein Res. 38, 90-95, 1991
A;Title: Purification and primary structure of glucagon from ostrich pancreas splenic lo
A;Reference number: A61583; MUID:92040567; PMID:1938110
A;Accession: A61583
A;Molecule type: protein
A;Residues: 1-29 <FER>
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas

  Query Match 41.1%; Score 30; DB 1; Length 29;
  Best Local Similarity 55.6%; Pred. No. 0.52;
  Matches 5; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 HXXGXFTXD 9
  | | || |
Db 1 HSQGTFTSD 9

RESULT 14
GCDF
glucagon - smaller spotted catshark
C;Species: Scyliorhinus canicula (smaller spotted catshark, smaller spotted dogfish)
C;Date: 31-Dec-1988 #sequence_revision 31-Dec-1988 #text_change 20-Mar-1998
C;Accession: A26992
R;Conlon, J.M.; O'Toole, L.; Thim, L.
FEBS Lett. 214, 50-56, 1987
A;Title: Primary structure of glucagon from the gut of the common dogfish (Scyliorhinus
A;Reference number: A26992; MUID:87190953; PMID:3569517
A;Accession: A26992
A;Molecule type: protein
A;Residues: 1-29 <CON>
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; intestine; pancreas

  Query Match 41.1%; Score 30; DB 1; Length 29;
  Best Local Similarity 55.6%; Pred. No. 0.52;
  Matches 5; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 HXXGXFTXD 9
  | | || |
Db 1 HSEGTFTSD 9

RESULT 15
GCTTS
glucagon - slider turtle
C;Species: Pseudemys scripta (slider)
C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 20-Mar-1998
C;Accession: B60414
R;Conlon, J.M.; Hicks, J.W.
Peptides 11, 461-466, 1990
A;Title: Isolation and structural characterization of insulin, glucagon and somatostatin
A;Reference number: A60414; MUID:90341082; PMID:1974347
A;Accession: B60414
A;Molecule type: protein
A;Residues: 1-29 <CON>
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas

  Query Match 41.1%; Score 30; DB 1; Length 29;
  Best Local Similarity 55.6%; Pred. No. 0.52;
  Matches 5; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 HXXGXFTXD 9
  | | || |
Db 1 HSQGTFTSD 9

Search completed: July 16, 2003, 13:04:09
Job time : 40 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 16, 2003, 12:53:38 ; Search time 23 Seconds
(without alignments)
70.329 Million cell updates/sec

Title: US-09-757-788A-1
Perfect score: 73
Sequence: 1 HXXGXFTXDXXXXXXXXXXXXFIXXXXXXXXXXXXXXXX 39

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID		Description
1	32	43.8	158	1	GLUC_PIG	P01274	sus scrofa
2	32	43.8	180	1	GLUC_BOVIN	P01272	bos taurus
3	32	43.8	180	1	GLUC_CAVPO	P05110	cavia porce
4	32	43.8	180	1	GLUC_HUMAN	P01275	homo sapien
5	32	43.8	180	1	GLUC_MESAU	P01273	mesocricetu
6	32	43.8	180	1	GLUC_MOUSE	P55095	mus musculu
7	32	43.8	180	1	GLUC_OCTDE	P22890	octodon deg
8	32	43.8	180	1	GLUC_RAT	P06883	rattus norv
9	31	42.5	103	1	GLUC_RANCA	P15438	rana catesb
10	30	41.1	29	1	GLUC_ANAPL	P01276	anas platyr
11	30	41.1	29	1	GLUC_CHIBR	P31297	chinchilla
12	30	41.1	29	1	GLUC_DIDMA	P18108	didelphis m
13	30	41.1	29	1	GLUC_LAMFL	Q9prq9	lampetra fl
14	30	41.1	29	1	GLUC_RABIT	P25449	oryctolagus
15	30	41.1	29	1	GLUC_SCYCA	P09687	scyliorhinu
16	30	41.1	29	1	GLUC_TORMA	P09567	torpedo mar
17	30	41.1	39	1	EXE3_HELHO	P20394	heloderma h
18	30	41.1	69	1	GLUC_CANFA	P29794	canis famil
19	30	41.1	96	1	GLUC_MYOSC	P09686	myoxocephal
20	30	41.1	124	1	GLU1_LOPAM	P01278	lophius ame
21	30	41.1	151	1	GLUC_CHICK	P01277	gallus gall
22	30	41.1	155	1	YKFB_ECOLI	P77162	escherichia
23	29	39.7	71	1	GLUC_ICTPU	P04093	ictalurus p
24	29	39.7	71	1	GLUC_PIAME	P81880	piaractus m
25	29	39.7	72	1	VIP_BOVIN	P81401	bos taurus
26	29	39.7	72	1	VIP_CAVPO	P04566	cavia porce
27	29	39.7	72	1	VIP_PIG	P01284	sus scrofa
28	29	39.7	72	1	VIP_RABIT	P32649	oryctolagus
29	29	39.7	75	1	GLUC_AMICA	P33528	amia calva
30	29	39.7	78	1	GLUC_LEPSP	P09566	lepisosteus
31	29	39.7	87	1	EXE4_HELSU	P26349	heloderma s
32	29	39.7	170	1	VIP_HUMAN	P01282	homo sapien
33	29	39.7	170	1	VIP_MOUSE	P32648	mus musculu
34	29	39.7	170	1	VIP_RAT	P01283	rattus norv
35	29	39.7	355	1	GBAC_CAEEL	Q19572	caenorhabdi
36	28	38.4	30	1	GLUM_ANGAN	P41521	anguilla an
37	28	38.4	121	1	GLUC_CARAU	P79695	carassius a
38	28	38.4	122	1	GLU2_LOPAM	P04092	lophius ame
39	28	38.4	753	1	CKAA_BACUF	O32321	bacillus th
40	28	38.4	1224	1	RPOD_PINTH	P41606	pinus thunb
41	28	38.4	1386	1	RPOD_MARPO	P06274	marchantia
42	27	37.0	38	1	GLUM_HYDCO	P23063	hydrolagus
43	27	37.0	245	1	PFLA_ECOLI	P09374	escherichia
44	27	37.0	1458	1	PA2R_RABIT	P49260	oryctolagus
45	27	37.0	1826	1	SUIS_RABIT	P07768	oryctolagus

ALIGNMENTS

RESULT 1
GLUC_PIG
ID GLUC_PIG STANDARD; PRT; 158 AA.
AC P01274;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-NOV-1990 (Rel. 16, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Glucagon precursor [Contains: Glicentin; Glicentin-related polypeptide
DE (GRPP); Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like
DE peptide 2 (GLP2)] (Fragment).
GN GCG.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX NCBI_TaxID=9823;
RN [1]
RP SEQUENCE OF 1-69.
RX MEDLINE=81248172; PubMed=6894800;
RA Thim L., Moody A.J.;
RT "The primary structure of porcine glicentin (proglucagon).";
RL Regul. Pept. 2:139-150(1981).
RN [2]
RP SEQUENCE OF 1-69.
RX MEDLINE=82221776; PubMed=7045833;
RA Thim L., Moody A.J.;
RT "The amino acid sequence of porcine glicentin.";
RL Peptides 2 Suppl. 2:37-39(1981).
RN [3]
RP SEQUENCE OF 33-61.
RA Bromer W.W., Sinn L.G., Behrens O.K.;
RT "The amino acid sequence of glucagon. V. Location of amide groups,
RT acid degradation studies and summary of sequential evidence.";
RL J. Am. Chem. Soc. 79:2807-2810(1957).
RN [4]
RP SEQUENCE OF 78-107.
RX MEDLINE=89327238; PubMed=2753890;
RA Orskov C., Bersani M., Johnsen A.H., Hoejrup P., Holst J.J.;
RT "Complete sequences of glucagon-like peptide-1 from human and pig
RT small intestine.";
RL J. Biol. Chem. 264:12826-12829(1989).
RN [5]
RP SEQUENCE OF 111-158.
RX MEDLINE=88243712; PubMed=3379036;
RA Buhl T., Thim L., Kofod H., Orskov C., Harling H., Holst J.J.;
RT "Naturally occurring products of proglucagon 111-160 in the porcine
RT and human small intestine.";
RL J. Biol. Chem. 263:8621-8624(1988).
RN [6]
RP X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
RX MEDLINE=76051297; PubMed=171582;
RA Sasaki K., Dockerill S., Adamiak D.A., Tickle I.J., Blundell T.L.;
RT "X-ray analysis of glucagon and its relationship to receptor
RT binding.";
RL Nature 257:751-757(1975).
CC -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC RAISES THE BLOOD SUGAR LEVEL.

```
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLOGY WITH
CC       HUMAN SEQUENCE.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   PIR; A01540; GCPG.
DR   PDB; 1GCN; 30-SEP-83.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 3.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues;
KW   3D-structure.
FT   NON_TER       1      1
FT   PEPTIDE       1     69       GLICENTIN.
FT   PEPTIDE       1     30       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      33     61       GLUCAGON.
FT   PEPTIDE      78    107       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     126    158       GLUCAGON-LIKE PEPTIDE 2.
FT   HELIX        39     42
FT   TURN         43     45
FT   HELIX        46     55
FT   TURN         56     57
SQ   SEQUENCE   158 AA;  18212 MW;  28C6FCF257F333B2 CRC64;

  Query Match             43.8%;  Score 32;  DB 1;  Length 158;
  Best Local Similarity   30.4%;  Pred. No. 0.27;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |            ||
Db         78 HAEGTFTSDVSSYLEGQAAKEFI 100


RESULT 2
GLUC_BOVIN
ID   GLUC_BOVIN     STANDARD;      PRT;   180 AA.
AC   P01272;
DT   21-JUL-1986 (Rel. 01, Created)
DT   13-AUG-1987 (Rel. 05, Last sequence update)
DT   15-JUN-2002 (Rel. 41, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Bos taurus (Bovine).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC   Bovidae; Bovinae; Bos.
OX   NCBI_TaxID=9913;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=83299996; PubMed=6577439;
RA   Lopez L.C., Frazier M.L., Su C.-J., Kumar A., Saunders G.F.;
RT   "Mammalian pancreatic preproglucagon contains three glucagon-related
RT   peptides.";
RL   Proc. Natl. Acad. Sci. U.S.A. 80:5485-5489(1983).
RN   [2]
RP   SEQUENCE OF 53-81.
RX   MEDLINE=71166445; PubMed=5102927;
RA   Bromer W.W., Boucher M.E., Koffenberger J.E. Jr.;
RT   "Amino acid sequence of bovine glucagon.";
RL   J. Biol. Chem. 246:2822-2827(1971).
RN   [3]
RP   STRUCTURE BY NMR OF 53-81.
RX   MEDLINE=71166445; PubMed=6631957;
RA   Braun W., Wider G., Lee K.H., Wuthrich K.;
RT   "Conformation of glucagon in a lipid-water interphase by 1H nuclear
RT   magnetic resonance.";
RL   J. Mol. Biol. 169:921-948(1983).
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; K00107; AAA30538.1; -.
DR   PIR; A01538; GCBO.
DR   PDB; 1KX6; 13-FEB-02.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   3D-structure.
FT   SIGNAL        1     20
FT   PEPTIDE      21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      53     81       GLUCAGON.
FT   PEPTIDE      92    128       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     146    178       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   180 AA;  20944 MW;  8D9B4FF05B9F15FF CRC64;

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.31;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |            ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 3
GLUC_CAVPO
ID   GLUC_CAVPO     STANDARD;      PRT;   180 AA.
AC   P05110;
DT   13-AUG-1987 (Rel. 05, Created)
DT   13-AUG-1987 (Rel. 05, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-37 (Oxyntomodulin); Glucagon-like peptide 1 (GLP1);
DE   Glucagon-like peptide 2 (GLP2)].
GN   GCG.
OS   Cavia porcellus (Guinea pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
OX   NCBI_TaxID=10141;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86248118; PubMed=3755107;
RA   Seino S., Welsh M., Bell G.I., Chan S.J., Steiner D.F.;
RT   "Mutations in the guinea pig preproglucagon gene are restricted to a
RT   specific portion of the prohormone sequence.";
RL   FEBS Lett. 203:25-30(1986).
RN   [2]
RP   SEQUENCE OF 53-81.
RX   MEDLINE=86165412; PubMed=3956884;
RA   Huang C.G., Eng J., Pan Y.-C.E., Hulmes J.D., Yalow R.S.;
RT   "Guinea pig glucagon differs from other mammalian glucagons.";
RL   Diabetes 35:508-512(1986).
RN   [3]
RP   PARTIAL SEQUENCE OF 53-89.
```

```
RX   MEDLINE=86017849; PubMed=4048553;
RA   Conlon J.M., Hansen H.F., Schwartz T.W.;
RT   "Primary structure of glucagon and a partial sequence of
RT   oxyntomodulin (glucagon-37) from the guinea pig.";
RL   Regul. Pept. 11:309-320(1985).
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; D00014; BAA00010.1; -.
DR   PIR; A24856; GCGP.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT   SIGNAL       1     20
FT   PEPTIDE      21    50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      53    81       GLUCAGON.
FT   PEPTIDE      53    89       GLUCAGON-37.
FT   PEPTIDE      92    128      GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     146    178      GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   180 AA;  20972 MW;  702FB181161D2776 CRC64;

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.31;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |            ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 4
GLUC_HUMAN
ID   GLUC_HUMAN     STANDARD;      PRT;   180 AA.
AC   P01275;
DT   21-JUL-1986 (Rel. 01, Created)
DT   13-AUG-1987 (Rel. 05, Last sequence update)
DT   15-JUN-2002 (Rel. 41, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=88330860; PubMed=2901414;
RA   Drucker D.J., Asa S.;
RT   "Glucagon gene expression in vertebrate brain.";
RL   J. Biol. Chem. 263:13475-13478(1988).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86259053; PubMed=3725587;
RA   White J.W., Saunders G.F.;
RT   "Structure of the human glucagon gene.";
RL   Nucleic Acids Res. 14:4719-4730(1986).
RN   [3]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Liver;
RX   MEDLINE=83271477; PubMed=6877358;
RA   Bell G.I., Sanchez-Pescador R., Laybourn P.J., Najarian R.C.;
RT   "Exon duplication and divergence in the human preproglucagon gene.";
RL   Nature 304:368-371(1983).
RN   [4]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Pancreas;
RA   Strausberg R.;
RL   Submitted (MAR-2001) to the EMBL/GenBank/DDBJ databases.
RN   [5]
RP   SEQUENCE OF 53-81.
RA   Thomsen J., Kristiansen K., Brunfeldt K., Sundby F.;
RT   "The amino acid sequence of human glucagon.";
RL   FEBS Lett. 21:315-319(1972).
RN   [6]
RP   SEQUENCE OF 98-127.
RX   MEDLINE=89327238; PubMed=2753890;
RA   Orskov C., Bersani M., Johnsen A.H., Hoejrup P., Holst J.J.;
RT   "Complete sequences of glucagon-like peptide-1 from human and pig
RT   small intestine.";
RL   J. Biol. Chem. 264:12826-12829(1989).
RN   [7]
RP   X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS) OF 53-81.
RX   MEDLINE=98334683; PubMed=9667960;
RA   Sturm N.S., Lin Y., Burley S.K., Krstenansky J.L., Ahn J.M.,
RA   Azizeh B.Y., Trivedi D., Hruby V.J.;
RT   "Structure-function studies on positions 17, 18, and 21 replacement
RT   analogues of glucagon: the importance of charged residues and salt
RT   bridges in glucagon biological activity.";
RL   J. Med. Chem. 41:2693-2700(1998).
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- PHARMACEUTICAL: Available under the names Glucagon (Eli Lilly) and
CC       GlucaGen or Glucagon Novo Nordisk (Novo Nordisk). Used to treat
CC       severe hypoglycemia in insulin-dependent diabetics.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   -!- DATABASE: NAME=Glucagon at Eli Lilly;
CC       NOTE=Clinical information on Eli Lilly glucagon products;
CC       WWW="http://www.lillyDiabetes.com/Products/PatientInfo.cfm".
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; J04040; AAA52567.1; -.
DR   EMBL; X03991; CAA27627.1; -.
DR   EMBL; V01515; CAA24759.1; -.
DR   EMBL; BC005278; AAH05278.1; -.
DR   PIR; A24377; GCHU.
DR   PIR; S23309; S23309.
DR   PDB; 1BH0; 18-NOV-98.
DR   Genew; HGNC:4191; GCG.
DR   MIM; 138030; -.
DR   MIM; 231530; -.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
```

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KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Pharmaceutical; 3D-structure.
FT   SIGNAL        1     20
FT   PEPTIDE      21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      53     81       GLUCAGON.
FT   PEPTIDE      98    127       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     146    178       GLUCAGON-LIKE PEPTIDE 2.
FT   CONFLICT     82     82       K -> N (IN REF. 3).
SQ   SEQUENCE   180 AA;  20909 MW;  7A99EEC629B2862C CRC64;

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.31;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 5
GLUC_MESAU
ID   GLUC_MESAU     STANDARD;      PRT;   180 AA.
AC   P01273;
DT   21-JUL-1986 (Rel. 01, Created)
DT   01-FEB-1996 (Rel. 33, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Mesocricetus auratus (Golden hamster).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC   Mesocricetus.
OX   NCBI_TaxID=10036;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=83167563; PubMed=6835407;
RA   Bell G.I., Santerre R.F., Mullenbach G.T.;
RT   "Hamster preproglucagon contains the sequence of glucagon and two
RT   related peptides.";
RL   Nature 302:716-718(1983).
RN   [2]
RP   REVISIONS TO 12-15.
RA   Bell G.I.;
RL   Submitted (XXX-1985) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; J00059; AAA37074.1; -.
DR   PIR; A01539; GCHY.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT   SIGNAL        1     20
FT   PEPTIDE      21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      53     81       GLUCAGON.
FT   PEPTIDE      92    128       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     146    178       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   180 AA;  20954 MW;  02791B49D7AADD4B CRC64;

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.31;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 6
GLUC_MOUSE
ID   GLUC_MOUSE     STANDARD;      PRT;   180 AA.
AC   P55095;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   15-JUN-2002 (Rel. 41, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Pancreatic islets;
RX   MEDLINE=95247722; PubMed=7730317;
RA   Rothenberg M.E., Eilertson C.D., Klein K., Zhou Y., Linberg I.,
RA   McDonald J.K., Mackin R.B., Noe B.D.;
RT   "Processing of mouse proglucagon by recombinant prohormone convertase
RT   1 and immunopurified prohormone convertase 2 in vitro.";
RL   J. Biol. Chem. 270:10136-10146(1995).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Shamsadin R., Knepel W.;
RT   "Mouse glucagon full length cDNA.";
RL   Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; Z46845; CAA86902.1; -.
DR   EMBL; AF276754; AAK96898.1; -.
DR   HSSP; P01274; 1GCN.
DR   MGD; MGI:95674; Gcg.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT   SIGNAL        1     20       BY SIMILARITY.
FT   PEPTIDE      21     50       GLICENTIN-RELATED POLYPEPTIDE.
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```
FT   PEPTIDE      53     81       GLUCAGON.
FT   PEPTIDE      92    128       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     146    178       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   180 AA;  20906 MW;  595AA6DD9A589950 CRC64;

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.31;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 7
GLUC_OCTDE
ID   GLUC_OCTDE     STANDARD;      PRT;   180 AA.
AC   P22890;
DT   01-AUG-1991 (Rel. 19, Created)
DT   01-AUG-1991 (Rel. 19, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Octodon degus (Degu).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Hystricognathi; Octodontidae; Octodon.
OX   NCBI_TaxID=10160;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=91155952; PubMed=2293024;
RA   Nishi M., Steiner D.F.;
RT   "Cloning of complementary DNAs encoding islet amyloid polypeptide,
RT   insulin, and glucagon precursors from a New World rodent, the degu,
RT   Octodon degus.";
RL   Mol. Endocrinol. 4:1192-1198(1990).
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
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CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; M57688; AAA40588.1; -.
DR   PIR; C36118; GCRTDU.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Amidation.
FT   SIGNAL       1     20
FT   PEPTIDE     21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE     53     81       GLUCAGON.
FT   PEPTIDE     92    127       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE    146    178       GLUCAGON-LIKE PEPTIDE 2.
FT   MOD_RES    127    127       AMIDATION (G-128 PROVIDE AMIDE GROUP).
SQ   SEQUENCE   180 AA;  21165 MW;  6E8836160A9A3051 CRC64;

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.31;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 8
GLUC_RAT
ID   GLUC_RAT       STANDARD;      PRT;   180 AA.
AC   P06883;
DT   01-JAN-1988 (Rel. 06, Created)
DT   01-JAN-1988 (Rel. 06, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=85054853; PubMed=6094539;
RA   Heinrich G., Gros P., Habener J.F.;
RT   "Glucagon gene sequence. Four of six exons encode separate functional
RT   domains of rat pre-proglucagon.";
RL   J. Biol. Chem. 259:14082-14087(1984).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=85051023; PubMed=6548696;
RA   Heinrich G., Gros P., Lund P.K., Bentley R.C., Habener J.F.;
RT   "Pre-proglucagon messenger ribonucleic acid: nucleotide and encoded
RT   amino acid sequences of the rat pancreatic complementary
RT   deoxyribonucleic acid.";
RL   Endocrinology 115:2176-2181(1984).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86304324; PubMed=3528148;
RA   Mojsov S., Heinrich G., Wilson I.B., Ravazzola M., Orci L.,
RA   Habener J.F.;
RT   "Preproglucagon gene expression in pancreas and intestine diversifies
RT   at the level of post-translational processing.";
RL   J. Biol. Chem. 261:11880-11889(1986).
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; K02813; AAA41235.1; -.
DR   EMBL; K02809; AAA41235.1; JOINED.
DR   EMBL; K02810; AAA41235.1; JOINED.
DR   EMBL; K02811; AAA41235.1; JOINED.
DR   EMBL; K02812; AAA41235.1; JOINED.
DR   PIR; A22655; GCRT.
DR   PIR; A44198; A44198.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
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DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT   SIGNAL        1     20
FT   PEPTIDE      21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      53     81       GLUCAGON.
FT   PEPTIDE      92    128       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     146    178       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   180 AA;  20846 MW;  76931409D03C7978 CRC64;

  Query Match             43.8%;  Score 32;  DB 1;  Length 180;
  Best Local Similarity   30.4%;  Pred. No. 0.31;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120


RESULT 9
GLUC_RANCA
ID   GLUC_RANCA     STANDARD;      PRT;   103 AA.
AC   P15438; P15439; P15440;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-JUL-1993 (Rel. 26, Last sequence update)
DT   01-JUL-1993 (Rel. 26, Last annotation update)
DE   Glucagon precursor (Fragments).
OS   Rana catesbeiana (Bull frog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.
OX   NCBI_TaxID=8400;
RN   [1]
RP   SEQUENCE.
RC   TISSUE=Pancreas;
RX   MEDLINE=88257102; PubMed=3260236;
RA   Pollock H.G., Hamilton J.W., Rouse J.B., Ebner K.E., Rawitch A.B.;
RT   "Isolation of peptide hormones from the pancreas of the bullfrog
RT   (Rana catesbeiana). Amino acid sequences of pancreatic polypeptide,
RT   oxyntomodulin, and two glucagon-like peptides.";
RL   J. Biol. Chem. 263:9746-9751(1988).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLOGY WITH
CC       OTHER SPECIES SEQUENCES.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   PIR; B28091; GCFGB.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 3.
KW   Glucagon family; Hormone.
FT   PEPTIDE       1     29       GLUCAGON.
FT   PEPTIDE       1     36       GLUCAGON-36 (OXYNTOMODULIN).
FT   PEPTIDE      39     70       GLUCAGON-LIKE PEPTIDE 1.
FT   NON_CONS     70     71
FT   PEPTIDE      71    103       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   103 AA;  11719 MW;  316287B7BAE1C8F7 CRC64;

  Query Match             42.5%;  Score 31;  DB 1;  Length 103;
  Best Local Similarity   26.1%;  Pred. No. 0.33;
  Matches    6;  Conservative    1;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |             |:
Db         39 HADGTFTSDMSSYLEEKAAKEFV 61


RESULT 10
GLUC_ANAPL
ID   GLUC_ANAPL     STANDARD;      PRT;    29 AA.
AC   P01276;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   15-JUL-1999 (Rel. 38, Last annotation update)
DE   Glucagon.
OS   Anas platyrhynchos (Domestic duck),
OS   Struthio camelus (Ostrich),
OS   Alligator mississippiensis (American alligator), and
OS   Trachemys scripta (Red-eared slider turtle) (Pseudemys scripta).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Anseriformes; Anatidae; Anas.
OX   NCBI_TaxID=8839, 8801, 8496, 34903;
RN   [1]
RP   SEQUENCE.
RC   SPECIES=A.platyrhynchos;
RX   MEDLINE=73049475; PubMed=4636745;
RA   Sundby F., Frandsen E.K., Thomsen J., Kristiansen K., Brunfeldt K.;
RT   "Crystallization and amino acid sequence of duck glucagon.";
RL   FEBS Lett. 26:289-293(1972).
RN   [2]
RP   SEQUENCE.
RC   SPECIES=S.camelus; TISSUE=Pancreas;
RX   MEDLINE=92040567; PubMed=1938110;
RA   Ferreira A., Litthauer D., Saayman H., Oelofsen W., Crabb J.,
RA   Lazure C.;
RT   "Purification and primary structure of glucagon from ostrich pancreas
RT   splenic lobes.";
RL   Int. J. Pept. Protein Res. 38:90-95(1991).
RN   [3]
RP   COMPOSITION.
RC   SPECIES=A.mississippiensis;
RX   MEDLINE=84262419; PubMed=6146554;
RA   Lance V., Hamilton J.W., Rouse J.B., Kimmel J.R., Pollock H.G.;
RT   "Isolation and characterization of reptilian insulin, glucagon, and
RT   pancreatic polypeptide: complete amino acid sequence of alligator
RT   (Alligator mississippiensis) insulin and pancreatic polypeptide.";
RL   Gen. Comp. Endocrinol. 55:112-124(1984).
RN   [4]
RP   SEQUENCE.
RC   SPECIES=T.scripta;
RX   MEDLINE=90341082; PubMed=1974347;
RA   Conlon J.M., Hicks J.W.;
RT   "Isolation and structural characterization of insulin, glucagon and
RT   somatostatin from the turtle, Pseudemys scripta.";
RL   Peptides 11:461-466(1990).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- MISCELLANEOUS: IT IS PROBABLE THAT ALLIGATOR GLUCAGON IS IDENTICAL
CC       TO DUCK.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   PIR; A01542; GCDK.
DR   PIR; B60414; GCTTS.
DR   PIR; A61583; A61583.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 1.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 1.
DR   PROSITE; PS00260; GLUCAGON; 1.
KW   Glucagon family; Hormone.
SQ   SEQUENCE   29 AA;  3470 MW;  04D474D35C73F027 CRC64;

  Query Match             41.1%;  Score 30;  DB 1;  Length 29;
  Best Local Similarity   55.6%;  Pred. No. 0.17;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db          1 HSQGTFTSD 9
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RESULT 11
GLUC_CHIBR
ID   GLUC_CHIBR     STANDARD;      PRT;    29 AA.
AC   P31297;
DT   01-JUL-1993 (Rel. 26, Created)
DT   01-JUL-1993 (Rel. 26, Last sequence update)
DT   15-JUN-2002 (Rel. 41, Last annotation update)
DE   Glucagon.
GN   GCG.
OS   Chinchilla brevicaudata (Chinchilla).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Hystricognathi; Chinchillidae;
OC   Chinchilla.
OX   NCBI_TaxID=10152;
RN   [1]
RP   SEQUENCE.
RX   MEDLINE=91045327; PubMed=2235678;
RA   Eng J., Kleinman W.A., Chu L.S.;
RT   "Purification of peptide hormones from chinchilla pancreas by
RT   chemical assay.";
RL   Peptides 11:683-685(1990).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   PIR; A60413; GCCB.
DR   HSSP; P01275; 1BH0.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 1.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 1.
DR   PROSITE; PS00260; GLUCAGON; 1.
KW   Glucagon family; Hormone.
SQ   SEQUENCE   29 AA;  3478 MW;  19ECF4DABB752B27 CRC64;

  Query Match             41.1%;  Score 30;  DB 1;  Length 29;
  Best Local Similarity   55.6%;  Pred. No. 0.17;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db          1 HSQGTFTSD 9


RESULT 12
GLUC_DIDMA
ID   GLUC_DIDMA     STANDARD;      PRT;    29 AA.
AC   P18108;
DT   01-NOV-1990 (Rel. 16, Created)
DT   01-NOV-1990 (Rel. 16, Last sequence update)
DT   15-JUN-2002 (Rel. 41, Last annotation update)
DE   Glucagon.
GN   GCG.
OS   Didelphis marsupialis virginiana (North American opossum).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Metatheria; Didelphimorphia; Didelphidae; Didelphis.
OX   NCBI_TaxID=9267;
RN   [1]
RP   SEQUENCE.
RC   TISSUE=Pancreas;
RX   MEDLINE=90160042; PubMed=2695899;
RA   Yu J.-H., Eng J., Rattan S., Yalow R.S.;
RT   "Opossum insulin, glucagon and pancreatic polypeptide: amino acid
RT   sequences.";
RL   Peptides 10:1195-1197(1989).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   PIR; JQ0364; GCOPV.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 1.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 1.
DR   PROSITE; PS00260; GLUCAGON; 1.
KW   Glucagon family; Hormone.
SQ   SEQUENCE   29 AA;  3456 MW;  04D474D35C752B27 CRC64;

  Query Match             41.1%;  Score 30;  DB 1;  Length 29;
  Best Local Similarity   55.6%;  Pred. No. 0.17;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db          1 HSQGTFTSD 9


RESULT 13
GLUC_LAMFL
ID   GLUC_LAMFL     STANDARD;      PRT;    29 AA.
AC   Q9PRQ9;
DT   16-OCT-2001 (Rel. 40, Created)
DT   16-OCT-2001 (Rel. 40, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon.
OS   Lampetra fluviatilis (River lamprey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Hyperoartia;
OC   Petromyzontiformes; Petromyzontidae; Lampetra.
OX   NCBI_TaxID=7748;
RN   [1]
RP   SEQUENCE.
RC   TISSUE=Small intestine;
RX   MEDLINE=96108396; PubMed=8575665;
RA   Conlon J.M., Bondareva V., Rusakov Y., Plisetskaya E.M.,
RA   Mynarcik D.C., Whittaker J.;
RT   "Characterization of insulin, glucagon, and somatostatin from the
RT   river lamprey, Lampetra fluviatilis.";
RL   Gen. Comp. Endocrinol. 100:96-105(1995).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   HSSP; P01275; 1BH0.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 1.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 1.
DR   PROSITE; PS00260; GLUCAGON; 1.
KW   Glucagon family; Hormone.
SQ   SEQUENCE   29 AA;  3398 MW;  03A901D08C5EAB27 CRC64;

  Query Match             41.1%;  Score 30;  DB 1;  Length 29;
  Best Local Similarity   55.6%;  Pred. No. 0.17;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db          1 HSQGSFTSD 9


RESULT 14
GLUC_RABIT
ID   GLUC_RABIT     STANDARD;      PRT;    29 AA.
AC   P25449;
DT   01-MAY-1992 (Rel. 22, Created)
DT   01-MAY-1992 (Rel. 22, Last sequence update)
DT   15-DEC-1998 (Rel. 37, Last annotation update)
DE   Glucagon.
GN   GCG.
OS   Oryctolagus cuniculus (Rabbit),
OS   Camelus dromedarius (Dromedary) (Arabian camel), and
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OS Saimiri sciureus (Common squirrel monkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX NCBI_TaxID=9986, 9838, 9521;
RN [1]
RP SEQUENCE.
RC SPECIES=Rabbit;
RX MEDLINE=72129389; PubMed=5011077;
RA Sundby F., Markussen J.;
RT "Rabbit glucagon: isolation, crystallization and amino acid
RT composition.";
RL Horm. Metab. Res. 4:56-56(1972).
RN [2]
RP SEQUENCE.
RC SPECIES=C.dromedarius;
RX MEDLINE=75027473; PubMed=4421675;
RA Sundby F., Markussen J., Danho W.;
RT "Camel glucagon: isolation, crystallization and amino acid
RT composition.";
RL Horm. Metab. Res. 6:425-425(1974).
RN [3]
RP SEQUENCE.
RC SPECIES=S.sciureus; TISSUE=Pancreas;
RX MEDLINE=91088593; PubMed=2263627;
RA Yu J.-H., Eng J., Yalow R.S.;
RT "Isolation and amino acid sequences of squirrel monkey (Saimiri
RT sciurea) insulin and glucagon.";
RL Proc. Natl. Acad. Sci. U.S.A. 87:9766-9768(1990).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR PIR; A91741; A91741.
DR PIR; A91742; A91742.
DR PIR; C39258; C39258.
DR HSSP; P01274; 1GCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 1.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 1.
DR PROSITE; PS00260; GLUCAGON; 1.
KW Glucagon family; Hormone.
SQ SEQUENCE 29 AA; 3483 MW; 04C584D35C752B27 CRC64;

Query Match 41.1%; Score 30; DB 1; Length 29;
Best Local Similarity 55.6%; Pred. No. 0.17;
Matches 5; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 HXXGXFTXD 9
| | || |
Db 1 HSQGTFTSD 9

RESULT 15
GLUC_SCYCA
ID GLUC_SCYCA STANDARD; PRT; 29 AA.
AC P09687;
DT 01-MAR-1989 (Rel. 10, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 01-JAN-1990 (Rel. 13, Last annotation update)
DE Glucagon.
OS Scyliorhinus canicula (Spotted dogfish) (Spotted catshark).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Chondrichthyes;
OC Elasmobranchii; Galeomorphii; Galeoidea; Carcharhiniformes;
OC Scyliorhinidae; Scyliorhinus.
OX NCBI_TaxID=7830;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=87190953; PubMed=3569517;
RA Conlon J.M., O'Toole L., Thim L.;
RT "Primary structure of glucagon from the gut of the common dogfish
RT (Scyliorhinus canicula).";
RL FEBS Lett. 214:50-56(1987).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR PIR; A26992; GCDF.
DR HSSP; P01274; 1GCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 1.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 1.
DR PROSITE; PS00260; GLUCAGON; 1.
KW Glucagon family; Hormone.
SQ SEQUENCE 29 AA; 3529 MW; 6FA96392086F0226 CRC64;

Query Match 41.1%; Score 30; DB 1; Length 29;
Best Local Similarity 55.6%; Pred. No. 0.17;
Matches 5; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 HXXGXFTXD 9
| | || |
Db 1 HSEGTFTSD 9

Search completed: July 16, 2003, 13:01:56
Job time : 24 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 16, 2003, 12:58:58 ; Search time 79 Seconds
(without alignments)
101.719 Million cell updates/sec

Title: US-09-757-788A-1
Perfect score: 73
Sequence: 1 HXXGXFTXDXXXXXXXXXXXXFIXXXXXXXXXXXXXXXX 39

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_21:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriap:*
17: sp_archeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	32	43.8	180	6	Q95LG0	Q95lg0 canis famil
2	31	42.5	160	13	Q9PUR1	Q9pur1 petromyzon
3	31	42.5	219	13	O42144	O42144 xenopus lae
4	31	42.5	220	13	Q8UWL9	Q8uwl9 hoplobatrac
5	31	42.5	266	13	O42143	O42143 xenopus lae
6	30	41.1	62	13	Q9PRW9	Q9prw9 scyliorhinu
7	30	41.1	96	13	Q9DG43	Q9dg43 ambloplites
8	30	41.1	120	13	Q9PUR0	Q9pur0 petromyzon
9	30	41.1	204	13	O12956	O12956 heloderma s
10	30	41.1	206	13	Q91410	Q91410 gallus gall
11	29	39.7	171	11	Q9D2Z7	Q9d2z7 mus musculu
12	29	39.7	178	13	Q91971	Q91971 oncorhynchu
13	29	39.7	178	13	Q91189	Q91189 oncorhynchu
14	29	39.7	206	16	Q9EWV6	Q9ewv6 streptomyce
15	29	39.7	1258	10	Q9SSP0	Q9ssp0 arabidopsis
16	28	38.4	72	13	Q91409	Q91409 oncorhynchu
17	28	38.4	121	13	Q9DDE6	Q9dde6 brachydanio
18	28	38.4	157	12	Q98434	Q98434 paramecium
19	28	38.4	400	10	Q9SQF7	Q9sqf7 brassica ju
20	28	38.4	451	16	Q99WP2	Q99wp2 staphylococ
21	28	38.4	475	10	Q9ST85	Q9st85 oryza sativ
22	28	38.4	1408	8	Q8WI26	Q8wi26 psilotum nu
23	27	37.0	47	2	Q9AGB8	Q9agb8 pseudomonas
24	27	37.0	94	2	Q9Z3Y2	Q9z3y2 pseudomonas
25	27	37.0	122	2	Q9F9Z8	Q9f9z8 pseudomonas
26	27	37.0	123	16	Q51512	Q51512 pseudomonas
27	27	37.0	125	2	Q8VV59	Q8vv59 pseudomonas
28	27	37.0	158	16	O05217	O05217 bacillus su
29	27	37.0	216	10	Q9C591	Q9c591 arabidopsis
30	27	37.0	221	5	O62473	O62473 caenorhabdi
31	27	37.0	265	16	Q8Z808	Q8z808 salmonella
32	27	37.0	266	2	P96301	P96301 alcaligenes
33	27	37.0	274	16	Q8ZQD0	Q8zqd0 salmonella
34	27	37.0	432	8	Q8WIW3	Q8wiw3 adinandra m
35	27	37.0	508	8	Q8WIV6	Q8wiv6 cleyera jap
36	27	37.0	508	8	Q8WIV3	Q8wiv3 eurya japon
37	27	37.0	624	10	Q8S5X9	Q8s5x9 oryza sativ
38	27	37.0	766	3	Q9C2R2	Q9c2r2 neurospora
39	27	37.0	1326	4	Q13019	Q13019 homo sapien
40	27	37.0	1465	4	Q13018	Q13018 homo sapien
41	26	35.6	209	16	Q9WYZ3	Q9wyz3 thermotoga
42	26	35.6	370	5	P90846	P90846 caenorhabdi
43	26	35.6	560	13	Q9PUD4	Q9pud4 xenopus lae
44	26	35.6	589	5	Q9GRN7	Q9grn7 leishmania
45	26	35.6	663	16	Q8ZM63	Q8zm63 salmonella

ALIGNMENTS

RESULT 1
Q95LG0
ID Q95LG0 PRELIMINARY; PRT; 180 AA.
AC Q95LG0;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
DE Preproglucagon.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A.
RA Irwin D.M.;
RT "cDNA cloning of proglucagon from the stomach and pancreas of the
RT dog.";
RL Submitted (SEP-2000) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AF308439; AAL09425.1; -.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 3.
DR PROSITE; PS00260; GLUCAGON; UNKNOWN_3.
SQ SEQUENCE 180 AA; 21114 MW; 80F66941AFC324FD CRC64;

Query Match 43.8%; Score 32; DB 6; Length 180;
Best Local Similarity 30.4%; Pred. No. 2.6;
Matches 7; Conservative 0; Mismatches 16; Indels 0; Gaps 0;

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Qy          1 HXXGXFTXDXXXXXXXXXXXXFI 23
              |  | || |           ||
Db         98 HAEGTFTSDVSSYLEGQAAKEFI 120
```

RESULT 2
Q9PUR1
ID Q9PUR1 PRELIMINARY; PRT; 160 AA.
AC Q9PUR1; Q9PRZ8; Q9PRZ7;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)

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DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   Glucagon I precursor [Contains: Glucagon; glucagon-like peptide 1
DE   (GLP-1); glucagon-like peptide 2 (GLP-2)].
OS   Petromyzon marinus (Sea lamprey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Hyperoartia;
OC   Petromyzontiformes; Petromyzontidae; Petromyzon.
OX   NCBI_TaxID=7757;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=INTESTINE;
RX   MEDLINE=20022986; PubMed=10555286;
RA   Irwin D.M., Huner O., Youson J.H.;
RT   "Lamprey proglucagon and the origin of glucagon-like peptides.";
RL   Mol. Biol. Evol. 16:1548-1557(1999).
RN   [2]
RP   SEQUENCE OF 43-71 AND 82-113.
RC   TISSUE=INTESTINE;
RX   MEDLINE=94010172; PubMed=8405897;
RA   Conlon J.M., Nielsen P.F., Youson J.H.;
RT   "Primary structures of glucagon and glucagon-like peptide isolated
RT   from the intestine of the parasitic phase lamprey Petromyzon
RT   marinus!";
RL   Gen. Comp. Endocrinol. 91:96-104(1993).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; AF159707; AAF09186.1; -.
DR   HSSP; P01275; 1BH0.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
KW   Multigene family.
FT   SIGNAL       1    22       POTENTIAL.
FT   PEPTIDE     43     71       GLUCAGON.
FT   PEPTIDE     82    113       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE    130    160       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   160 AA;  18042 MW;  9A52C530D5A74072 CRC64;

  Query Match             42.5%;  Score 31;  DB 13;  Length 160;
  Best Local Similarity   26.1%;  Pred. No. 4.1;
  Matches    6;  Conservative    1;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |           |:
Db         82 HADGTFTNDMTSYLDAKAARDFV 104


RESULT 3
O42144
ID   O42144      PRELIMINARY;      PRT;   219 AA.
AC   O42144;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   Glucagon II precursor [Contains: Glucagon; glucagon-like peptide 1A
DE   (GLP-1A); glucagon-like peptide 1B (GLP-1B); glucagon-like peptide 1C
DE   (GLP-1C)].
OS   Xenopus laevis (African clawed frog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
OC   Xenopodinae; Xenopus.
OX   NCBI_TaxID=8355;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=PANCREAS;
RX   MEDLINE=97368292; PubMed=9223287;
RA   Irwin D.M., Satkunarajah M., Wen Y., Brubaker P.L., Pederson R.A.,
RA   Wheeler M.B.;
RT   "The Xenopus proglucagon gene encodes novel GLP-1-like peptides with
RT   insulinotropic properties.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:7915-7920(1997).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; AF004433; AAB65661.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 4.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 4.
DR   PROSITE; PS00260; GLUCAGON; 3.
KW   Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
KW   Multigene family.
FT   SIGNAL       1     20       POTENTIAL.
FT   PEPTIDE     53     81       GLUCAGON.
FT   PEPTIDE     97    133       GLUCAGON-LIKE PEPTIDE 1A.
FT   PEPTIDE    142    173       GLUCAGON-LIKE PEPTIDE 1B.
FT   PEPTIDE    180    211       GLUCAGON-LIKE PEPTIDE 1C.
SQ   SEQUENCE   219 AA;  25271 MW;  ACC699233C362CE0 CRC64;

  Query Match             42.5%;  Score 31;  DB 13;  Length 219;
  Best Local Similarity   30.4%;  Pred. No. 5.7;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |           ||
Db         97 HAEGTFTSDVTQHLDEKAAKEFI 119


RESULT 4
Q8UWL9
ID   Q8UWL9      PRELIMINARY;      PRT;   220 AA.
AC   Q8UWL9;
DT   01-MAR-2002 (TrEMBLrel. 20, Created)
DT   01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
DT   01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE   Proglucagon.
OS   Hoplobatrachus rugulosus.
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae;
OC   Hoplobatrachus.
OX   NCBI_TaxID=110072;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Yeung C.-M., Chow B.K.C.;
RT   "Identification of a proglucagon cDNA from Rana tigrina rugulosa that
RT   encodes two GLP-1s.";
RL   Gen. Comp. Endocrinol. 124:0-0(2001).
DR   EMBL; AF324209; AAL35758.1; -.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 4.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 4.
DR   PROSITE; PS00260; GLUCAGON; UNKNOWN_4.
SQ   SEQUENCE   220 AA;  25615 MW;  C72D926E7F89E381 CRC64;

  Query Match             42.5%;  Score 31;  DB 13;  Length 220;
  Best Local Similarity   26.1%;  Pred. No. 5.7;
  Matches    6;  Conservative    1;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |           |:
Db        135 HAEGTFTSDMTSYLEEKAAKEFV 157


RESULT 5
O42143
ID   O42143      PRELIMINARY;      PRT;   266 AA.
AC   O42143;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   Glucagon I precursor [Contains: Glucagon; glucagon-like peptide 1A
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DE   (GLP-1A); glucagon-like peptide 1B (GLP-1B); glucagon-like peptide 1C
DE   (GLP-1C); glucagon-like peptide 2 (GLP-2)].
OS   Xenopus laevis (African clawed frog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
OC   Xenopodinae; Xenopus.
OX   NCBI_TaxID=8355;
RN   [1]
RP   SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
RC   TISSUE=PANCREAS;
RX   MEDLINE=97368292; PubMed=9223287;
RA   Irwin D.M., Satkunarajah M., Wen Y., Brubaker P.L., Pederson R.A.,
RA   Wheeler M.B.;
RT   "The Xenopus proglucagon gene encodes novel GLP-1-like peptides with
RT   insulinotropic properties.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:7915-7920(1997).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; 1 (SHOWN HERE) AND 2; ARE
CC       PRODUCED BY ALTERNATIVE SPLICING.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; AF004432; AAB65660.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 5.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 5.
DR   PROSITE; PS00260; GLUCAGON; 5.
KW   Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
KW   Multigene family; Alternative splicing.
FT   SIGNAL       1      ?       POTENTIAL.
FT   PEPTIDE     53     81       GLUCAGON.
FT   PEPTIDE     97    133       GLUCAGON-LIKE PEPTIDE 1A.
FT   PEPTIDE    142    173       GLUCAGON-LIKE PEPTIDE 1B.
FT   PEPTIDE    180    211       GLUCAGON-LIKE PEPTIDE 1C.
FT   PEPTIDE    227    259       GLUCAGON-LIKE PEPTIDE 2.
FT   VARSPLIC   214    261       MISSING (IN ISOFORM 2).
SQ   SEQUENCE   266 AA;  30951 MW;  544F7BBC20AF872C CRC64;

  Query Match             42.5%;  Score 31;  DB 13;  Length 266;
  Best Local Similarity   30.4%;  Pred. No. 6.9;
  Matches    7;  Conservative    0;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |           ||
Db         97 HAEGTFTSDVTQQLDEKAAKEFI 119


RESULT 6
Q9PRW9
ID   Q9PRW9      PRELIMINARY;      PRT;    62 AA.
AC   Q9PRW9; Q9PRX0; Q9PRW8;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE   Glucagon precursor [Contains: glucagon-29; glucagon-33; glucagon-like
DE   peptide] (Fragments).
OS   Scyliorhinus canicula (Spotted dogfish) (Spotted catshark).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Chondrichthyes;
OC   Elasmobranchii; Galeomorphii; Galeoidea; Carcharhiniformes;
OC   Scyliorhinidae; Scyliorhinus.
OX   NCBI_TaxID=7830;
RN   [1]
RP   SEQUENCE.
RC   TISSUE=PANCREAS;
RX   MEDLINE=94286411; PubMed=8015974;
RA   Conlon J.M., Hazon N., Thim L.;
RT   "Primary structures of peptides derived from proglucagon isolated from
RT   the pancreas of the elasmobranch fish, Scyliorhinus canicula.";
RL   Peptides 15:163-167(1994).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone.
FT   PEPTIDE       1     29       GLUCAGON-29.
FT   PEPTIDE       1     33       GLUCAGON-33.
FT   NON_CONS     33     34
FT   PEPTIDE      34     62       GLUCAGON-LIKE PEPTIDE.
SQ   SEQUENCE   62 AA;  7270 MW;  C5FF487C12C69CD1 CRC64;

  Query Match             41.1%;  Score 30;  DB 13;  Length 62;
  Best Local Similarity   55.6%;  Pred. No. 2.7;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db          1 HSEGTFTSD 9


RESULT 7
Q9DG43
ID   Q9DG43      PRELIMINARY;      PRT;    96 AA.
AC   Q9DG43;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   Proglucagon (Fragment).
OS   Ambloplites rupestris.
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC   Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Percoidei;
OC   Centrarchidae; Ambloplites.
OX   NCBI_TaxID=109273;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Al-Mahrouki A.A., Irwin D.M., Youson J.H.;
RT   "Rock Bass Proglucagon.";
RL   Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF190499; AAG16778.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; UNKNOWN_1.
FT   NON_TER       1      1
FT   CHAIN         1    >29       GLUCAGON.
FT   CHAIN        39    >70       GLUCAGON-LIKE PEPTIDE 1.
FT   CHAIN        86    >96       GLUCAGON-LIKE PEPTIDE 2.
FT   NON_TER      96     96
SQ   SEQUENCE   96 AA;  11225 MW;  6435033EBDDC00CE CRC64;

  Query Match             41.1%;  Score 30;  DB 13;  Length 96;
  Best Local Similarity   26.1%;  Pred. No. 4.3;
  Matches    6;  Conservative    1;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXDXXXXXXXXXXXFI 23
              |  | || |            |:
Db         39 HADGTFTDDASSDFYDQAIKDFV 61


RESULT 8
Q9PUR0
ID   Q9PUR0      PRELIMINARY;      PRT;   120 AA.
AC   Q9PUR0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   Glucagon II precursor [Contains: Glucagon; glucagon-like peptide
DE   (GLP)].
OS   Petromyzon marinus (Sea lamprey).
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OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Hyperoartia;
OC   Petromyzontiformes; Petromyzontidae; Petromyzon.
OX   NCBI_TaxID=7757;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=INTESTINE;
RX   MEDLINE=20022986; PubMed=10555286;
RA   Irwin D.M., Huner O., Youson J.H.;
RT   "Lamprey proglucagon and the origin of glucagon-like peptides.";
RL   Mol. Biol. Evol. 16:1548-1557(1999).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; AF159708; AAF09187.1; -.
DR   HSSP; P01275; 1BH0.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
KW   Multigene family.
FT   SIGNAL        1      ?       POTENTIAL.
FT   PEPTIDE      44     72       GLUCAGON.
FT   PEPTIDE      89    120       GLUCAGON-LIKE PEPTIDE.
SQ   SEQUENCE   120 AA;  13397 MW;  FBDE667B96E198D8 CRC64;

  Query Match             41.1%;  Score 30;  DB 13;  Length 120;
  Best Local Similarity   55.6%;  Pred. No. 5.4;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db         44 HSQGSFTSD 52


RESULT 9
O12956
ID   O12956      PRELIMINARY;      PRT;   204 AA.
AC   O12956; O12955;
DT   01-JUL-1997 (TrEMBLrel. 04, Created)
DT   01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   Glucagon precursor.
OS   Heloderma suspectum (Gila monster).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Lepidosauria; Squamata; Scleroglossa; Anguimorpha; Helodermatidae;
OC   Heloderma.
OX   NCBI_TaxID=8554;
RN   [1]
RP   SEQUENCE FROM N.A., ALTERNATIVE SPLICING, AND TISSUE SPECIFICITY.
RC   TISSUE=INTESTINE, AND PANCREAS;
RX   MEDLINE=97172477; PubMed=9020121;
RA   Chen Y.E., Drucker D.J.;
RT   "Tissue-specific expression of unique mRNAs that encode proglucagon-
RT   derived peptides or exendin 4 in the lizard.";
RL   J. Biol. Chem. 272:4108-4115(1997).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL (BY SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; LPII (SHOWN HERE) AND LPI; ARE
CC       PRODUCED BY ALTERNATIVE SPLICING.
CC   -!- TISSUE SPECIFICITY: ISOFORM LPII IS EXPRESSED IN BOTH PANCREAS AND
CC       INTESTINE. EXPRESSION OF ISOFORM LPI IS RESTRICTED TO THE
CC       PANCREAS. NEITHER ISOFORM IS DETECTED IN SALIVARY GLAND.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS IN
CC       RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; U77612; AAB51129.1; -.
DR   EMBL; U77611; AAB51128.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Alternative splicing.
FT   SIGNAL        1     20       BY SIMILARITY.
FT   PEPTIDE      21     50       GRPP (GLICENTINE RELATED POLYPEPTIDE).
FT   PEPTIDE      53     81       GLUCAGON.
FT   PEPTIDE     116    145       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     164    196       GLUCAGON-LIKE PEPTIDE 2.
FT   VARSPLIC    149    149       D -> E (IN ISOFORM LPI).
FT   VARSPLIC    150    204       MISSING (IN ISOFORM LPI).
SQ   SEQUENCE   204 AA;  23553 MW;  B132E3FE46873E72 CRC64;

  Query Match             41.1%;  Score 30;  DB 13;  Length 204;
  Best Local Similarity   55.6%;  Pred. No. 9.5;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db         53 HSQGTFTSD 61


RESULT 10
Q91410
ID   Q91410      PRELIMINARY;      PRT;   206 AA.
AC   Q91410;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   Proglucagon.
GN   PROGLUCAGON.
OS   Gallus gallus (Chicken).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Gallus.
OX   NCBI_TaxID=9031;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=95295739; PubMed=7776976;
RA   Irwin D.M., Wong J.;
RT   "Trout and chicken proglucagon: alternative splicing generates mRNA
RT   transcripts encoding glucagon-like peptide 2.";
RL   Mol. Endocrinol. 9:267-277(1995).
DR   EMBL; S78477; AAB34506.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 3.
SQ   SEQUENCE   206 AA;  23875 MW;  AB299E1B02FC6AA4 CRC64;

  Query Match             41.1%;  Score 30;  DB 13;  Length 206;
  Best Local Similarity   55.6%;  Pred. No. 9.6;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db         55 HSQGTFTSD 63


RESULT 11
Q9D2Z7
ID   Q9D2Z7      PRELIMINARY;      PRT;   171 AA.
AC   Q9D2Z7;
DT   01-JUN-2001 (TrEMBLrel. 17, Created)
DT   01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   Vasoactive intestinal polypeptide.
GN   VIP.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
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OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=C57BL/6J; TISSUE=CECUM;
RX   MEDLINE=21085660; PubMed=11217851;
RA   Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA   Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA   Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA   Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA   Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA   Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA   Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA   Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA   Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA   Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA   Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA   Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA   Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA   Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA   Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA   Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA   Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA   Hayashizaki Y.;
RT   "Functional annotation of a full-length mouse cDNA collection.";
RL   Nature 409:685-690(2001).
DR   EMBL; AK018599; BAB31301.1; -.
DR   MGD; MGI:98933; Vip.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 1.
SQ   SEQUENCE   171 AA;  19135 MW;  134A434DB6DF1254 CRC64;

  Query Match             39.7%;  Score 29;  DB 11;  Length 171;
  Best Local Similarity   55.6%;  Pred. No. 14;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db         82 HADGVFTSD 90


RESULT 12
Q91971
ID   Q91971      PRELIMINARY;      PRT;   178 AA.
AC   Q91971; Q91408; Q91188; Q92169;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   Glucagon I precursor.
OS   Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC   Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
OX   NCBI_TaxID=8022;
RN   [1]
RP   SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
RC   TISSUE=DISTAL SMALL INTESTINE, AND PANCREAS;
RX   MEDLINE=95295739; PubMed=7776976;
RA   Irwin D.M., Wong J.;
RT   "Trout and chicken proglucagon: alternative splicing generates mRNA
RT   transcripts encoding glucagon-like peptide 2.";
RL   Mol. Endocrinol. 9:267-277(1995).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL (BY SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; INTESTINAL (SHOWN HERE) AND
CC       PANCREATIC; ARE PRODUCED BY ALTERNATIVE SPLICING.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS IN
CC       RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; U19913; AAC59667.1; -.
DR   EMBL; U19917; AAC59669.1; -.
DR   EMBL; U19918; AAC60212.1; -.
DR   EMBL; U19919; AAC60213.1; -.
DR   EMBL; U19918; AAC60213.1; JOINED.
DR   EMBL; S78475; AAB34505.1; -.
DR   EMBL; S78473; AAB34504.2; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 3.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Alternative splicing; Multigene family.
FT   SIGNAL       1      ?       POTENTIAL.
FT   PEPTIDE      ?     49       GRPP (GLICENTINE RELATED POLYPEPTIDE).
FT   PEPTIDE     52     80       GLUCAGON.
FT   PEPTIDE     85    120       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE    137    169       GLUCAGON-LIKE PEPTIDE 2.
FT   VARSPLIC   124    178       MISSING (IN PANCREATIC ISOFORM).
SQ   SEQUENCE   178 AA;  20034 MW;  5CF6980CF2A9D58E CRC64;

  Query Match             39.7%;  Score 29;  DB 13;  Length 178;
  Best Local Similarity   55.6%;  Pred. No. 15;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db        137 HVDGSFTSD 145


RESULT 13
Q91189
ID   Q91189      PRELIMINARY;      PRT;   178 AA.
AC   Q91189; Q92168;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   Glucagon II precursor.
OS   Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC   Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
OX   NCBI_TaxID=8022;
RN   [1]
RP   SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
RC   TISSUE=DISTAL SMALL INTESTINE, AND PANCREAS;
RX   MEDLINE=95295739; PubMed=7776976;
RA   Irwin D.M., Wong J.;
RT   "Trout and chicken proglucagon: alternative splicing generates mRNA
RT   transcripts encoding glucagon-like peptide 2.";
RL   Mol. Endocrinol. 9:267-277(1995).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL (BY SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; INTESTINAL (SHOWN HERE) AND
CC       PANCREATIC; ARE PRODUCED BY ALTERNATIVE SPLICING.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS IN
CC       RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; U19914; AAC59668.1; -.
DR   EMBL; U19916; AAC60210.1; -.
DR   EMBL; U19915; AAC60210.1; JOINED.
DR   EMBL; U19915; AAC60209.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; UNKNOWN_2.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Alternative splicing; Multigene family.
FT   SIGNAL       1      ?       POTENTIAL.
FT   PEPTIDE      ?     49       GRPP (GLICENTINE RELATED POLYPEPTIDE).
FT   PEPTIDE     52     80       GLUCAGON.
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FT   PEPTIDE      85    120       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     137    169       GLUCAGON-LIKE PEPTIDE 2.
FT   VARSPLIC    124    178       MISSING (IN PANCREATIC ISOFORM).
SQ   SEQUENCE   178 AA;  19998 MW;  E89D73866CD91C66 CRC64;

  Query Match             39.7%;  Score 29;  DB 13;  Length 178;
  Best Local Similarity   55.6%;  Pred. No. 15;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db        137 HVDGSFTSD 145


RESULT 14
Q9EWV6
ID   Q9EWV6      PRELIMINARY;      PRT;   206 AA.
AC   Q9EWV6;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE   Hypothetical protein SCK13.15c (Hypothetical protein SCO4923).
GN   SCK13.15C OR SCO4923.
OS   Streptomyces coelicolor.
OC   Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
OC   Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.
OX   NCBI_TaxID=1902;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=A3(2);
RA   Seeger K.J., Harris D.;
RL   Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=A3(2);
RA   Cerdeno A.M., Parkhill J., Barrell B.G., Rajandream M.A.;
RL   Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RC   STRAIN=A3(2);
RX   MEDLINE=97000351; PubMed=8843436;
RA   Redenbach M., Kieser H.M., Denapaite D., Eichner A., Cullum J.,
RA   Kinashi H., Hopwood D.A.;
RT   "A set of ordered cosmids and a detailed genetic and physical map for
RT   the 8 Mb Streptomyces coelicolor A3(2) chromosome.";
RL   Mol. Microbiol. 21:77-96(1996).
RN   [4]
RP   SEQUENCE FROM N.A.
RC   STRAIN=A3(2) / M145;
RA   Bentley S.D., Chater K.F., Cerdeno-Tarraga A.-M., Challis G.L.,
RA   Thomson N.R., James K.D., Harris D.E., Quail M.A., Kieser H.,
RA   Harper D., Bateman A., Brown S., Chandra G., Chen C.W., Collins M.,
RA   Cronin A., Fraser A., Goble A., Hidalgo J., Hornsby T., Howarth S.,
RA   Huang C.-H., Kieser T., Larke L., Murphy L., Oliver K., O'Neil S.,
RA   Rabbinowitsch E., Rajandream M.A., Rutherford K., Rutter S.,
RA   Seeger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
RA   Warren T., Wietzorrek A., Woodward J., Barrell B.G., Parkhill J.,
RA   Hopwood D.A.;
RT   "Complete genome sequence of the model actinomycete Streptomyces
RT   coelicolor A3(2).";
RL   Nature 417:141-147(2002).
DR   EMBL; AL512667; CAC21627.1; -.
DR   EMBL; AL451182; CAD30913.1; -.
DR   HSSP; Q02169; 1EX2.
DR   InterPro; IPR003697; Maf.
DR   Pfam; PF02545; Maf; 1.
DR   TIGRFAMs; TIGR00172; maf; 1.
KW   Hypothetical protein; Complete proteome.
SQ   SEQUENCE   206 AA;  21266 MW;  7A8FA785075B1FF6 CRC64;

  Query Match             39.7%;  Score 29;  DB 16;  Length 206;
  Best Local Similarity   55.6%;  Pred. No. 17;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db        153 HVAGAFTLD 161


RESULT 15
Q9SSP0
ID   Q9SSP0      PRELIMINARY;      PRT;  1258 AA.
AC   Q9SSP0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE   Similar to downy mildew resistance protein RPP5.
GN   F3N23.6.
OS   Arabidopsis thaliana (Mouse-ear cress).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
OC   eurosids II; Brassicales; Brassicaceae; Arabidopsis.
OX   NCBI_TaxID=3702;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Federspiel N.A., Palm C.J., Conway A.B., Conn L., Hansen N.F.,
RA   Altafi H., Araujo R., Huizar L., Rowley D., Chen S., Harman P.,
RA   Hicks R., Huerta M., Mason S., Siepel J., Zimmerman M., Buehler E.,
RA   Dunn P., Gonzalez A., Kremenetskaia I., Kim C., Lenz C., Li J.,
RA   Liu S., Luros S., Schwartz J., Shinn P., Toriumi M., Vysotskaia V.S.,
RA   Walker M., Yu G., Ecker J., Theologis A., Davis R.W.;
RL   Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AC008017; AAD55633.1; -.
DR   InterPro; IPR000767; Disease_resist.
DR   InterPro; IPR001611; LRR.
DR   InterPro; IPR002182; NB-ARC.
DR   InterPro; IPR000157; TIR_domain.
DR   Pfam; PF00560; LRR; 2.
DR   Pfam; PF00931; NB-ARC; 1.
DR   Pfam; PF01582; TIR; 1.
DR   PRINTS; PR00364; DISEASERSIST.
DR   SMART; SM00255; TIR; 1.
SQ   SEQUENCE   1258 AA;  143218 MW;  A1047F4CDE1F9679 CRC64;

  Query Match             39.7%;  Score 29;  DB 10;  Length 1258;
  Best Local Similarity   55.6%;  Pred. No. 1.2e+02;
  Matches    5;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 HXXGXFTXD 9
              |  | || |
Db        115 HQTGSFTFD 123


Search completed: July 16, 2003, 13:03:24
Job time : 82 secs
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